

KIC 003661206

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
003661206-01	OBS	No	3.586322	134.766720	89.1	13.766	9.0	9.8	1.65	7236	1.79	2418.06
003661206-02	OBS	No	431.429911	148.112115	1188.2	17.528	11.5	10.8	1.65	7236	6.68	4.07
003661206-03	OBS	No	1.410820	131.915654	114.5	6.184	11.3	12.4	1.65	7236	2.92	8388.87
003661206-04	OBS	No	1.410858	132.604741	124.2	6.538	13.5	16.5	1.65	7236	2.89	8388.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003661206-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003661206-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
003661206-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003661206-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

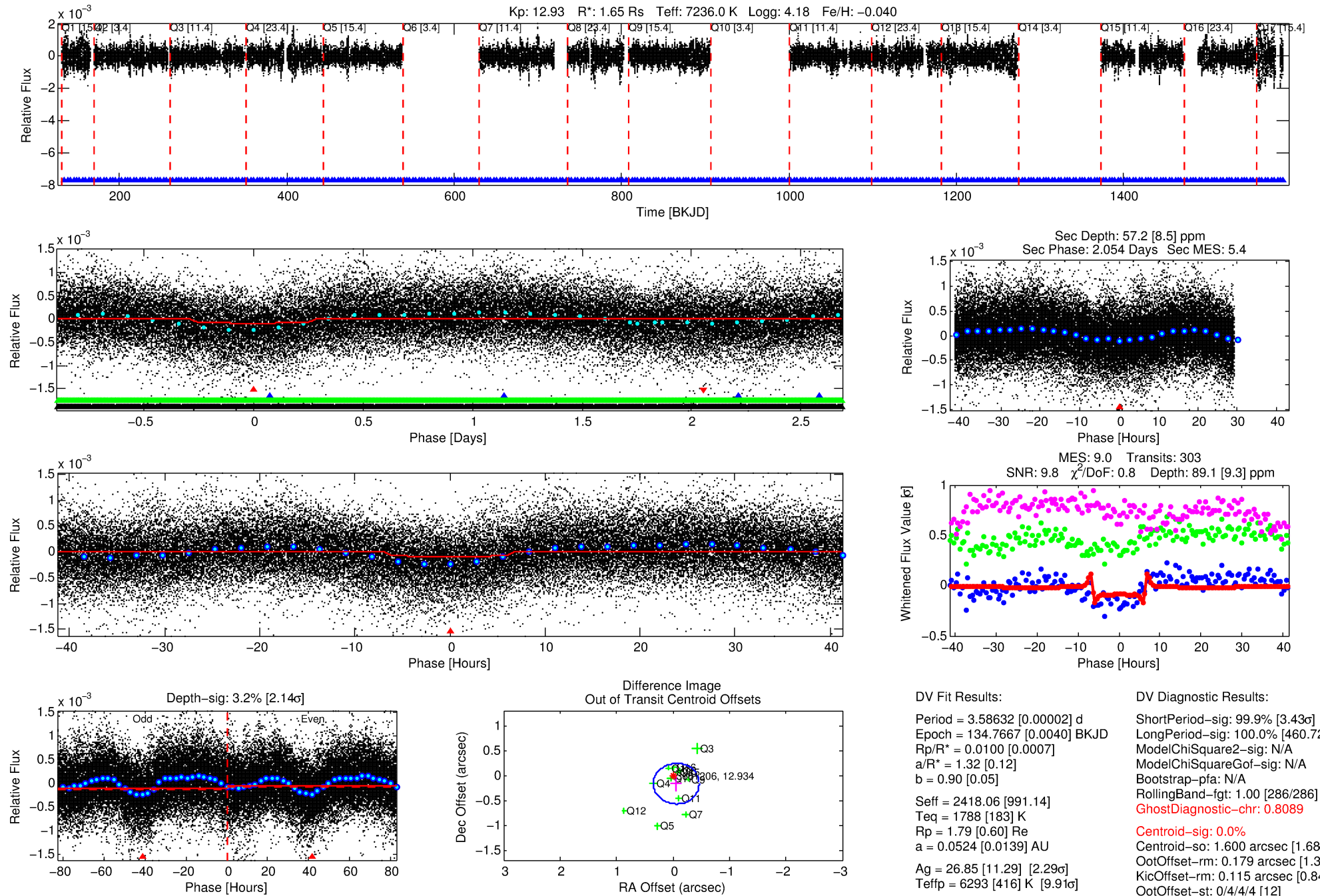
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003661206-01

No Significant Match Found

DV One-Page Summary

KIC: 3661206 Candidate: 1 of 4 Period: 3.586 d



DV Fit Results:

Period = 3.58632 [0.00002] d
Epoch = 134.7667 [0.0040] BKJD
Rp/R* = 0.0100 [0.0007]
a/R* = 1.32 [0.12]
b = 0.90 [0.05]
Seff = 2418.06 [991.14]
Teq = 1788 [183] K
Rp = 1.79 [0.60] Re
a = 0.0524 [0.0139] AU
Ag = 26.85 [11.29] [2.29 σ]
Teffp = 6293 [416] K [9.91 σ]

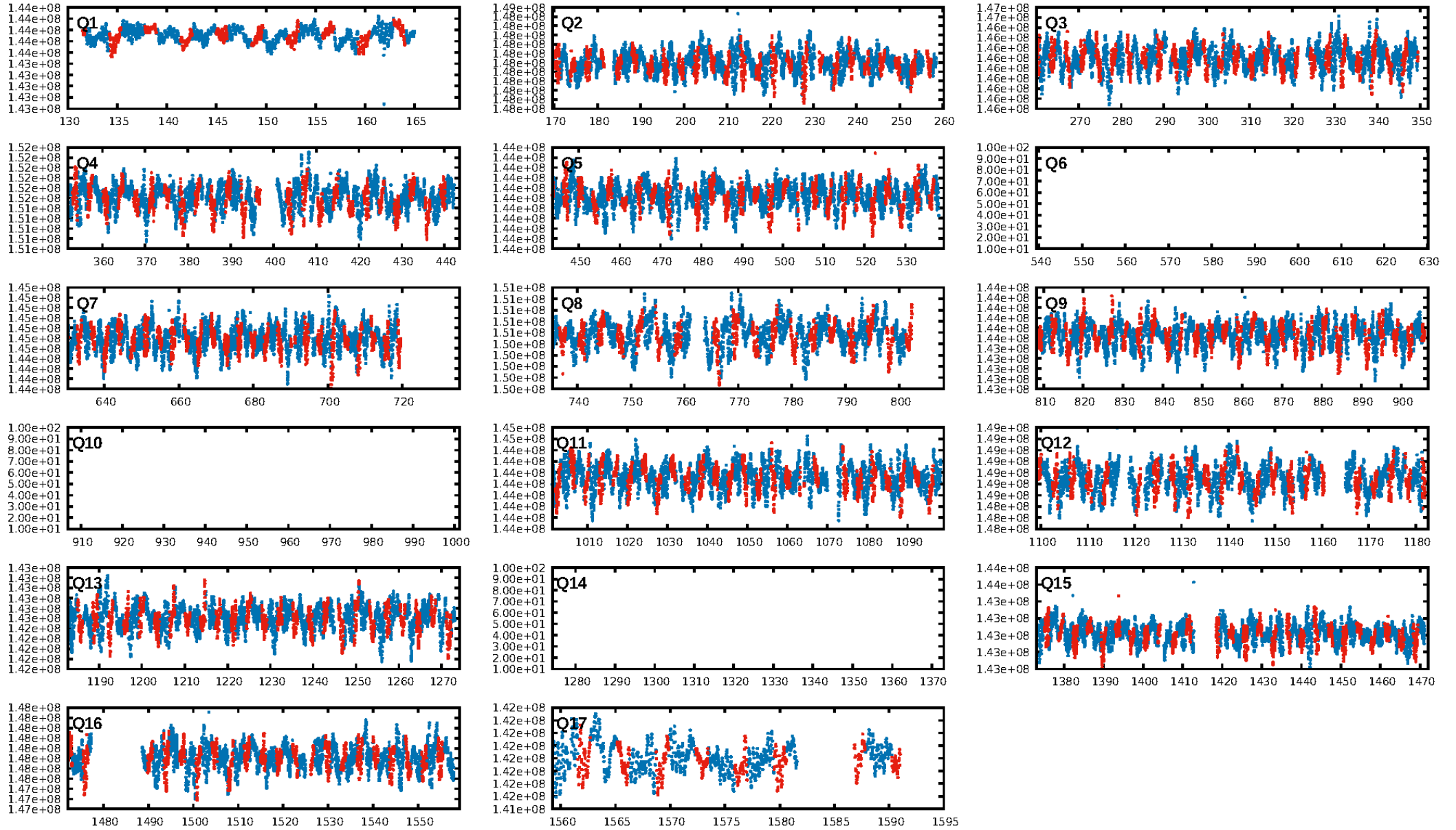
DV Diagnostic Results:

ShortPeriod-sig: 99.9% [3.43 σ]
LongPeriod-sig: 100.0% [460.72 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [286/286]
GhostDiagnostic-chr: 0.8089
Centroid-sig: 0.0%
Centroid-so: 1.600 arcsec [1.68 σ]
OotOffset-rm: 0.179 arcsec [1.32 σ]
KicOffset-rm: 0.115 arcsec [0.84 σ]
OotOffset-st: 0/4/4/4 [12]
KicOffset-st: 0/4/4/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 0.00 [0/14]

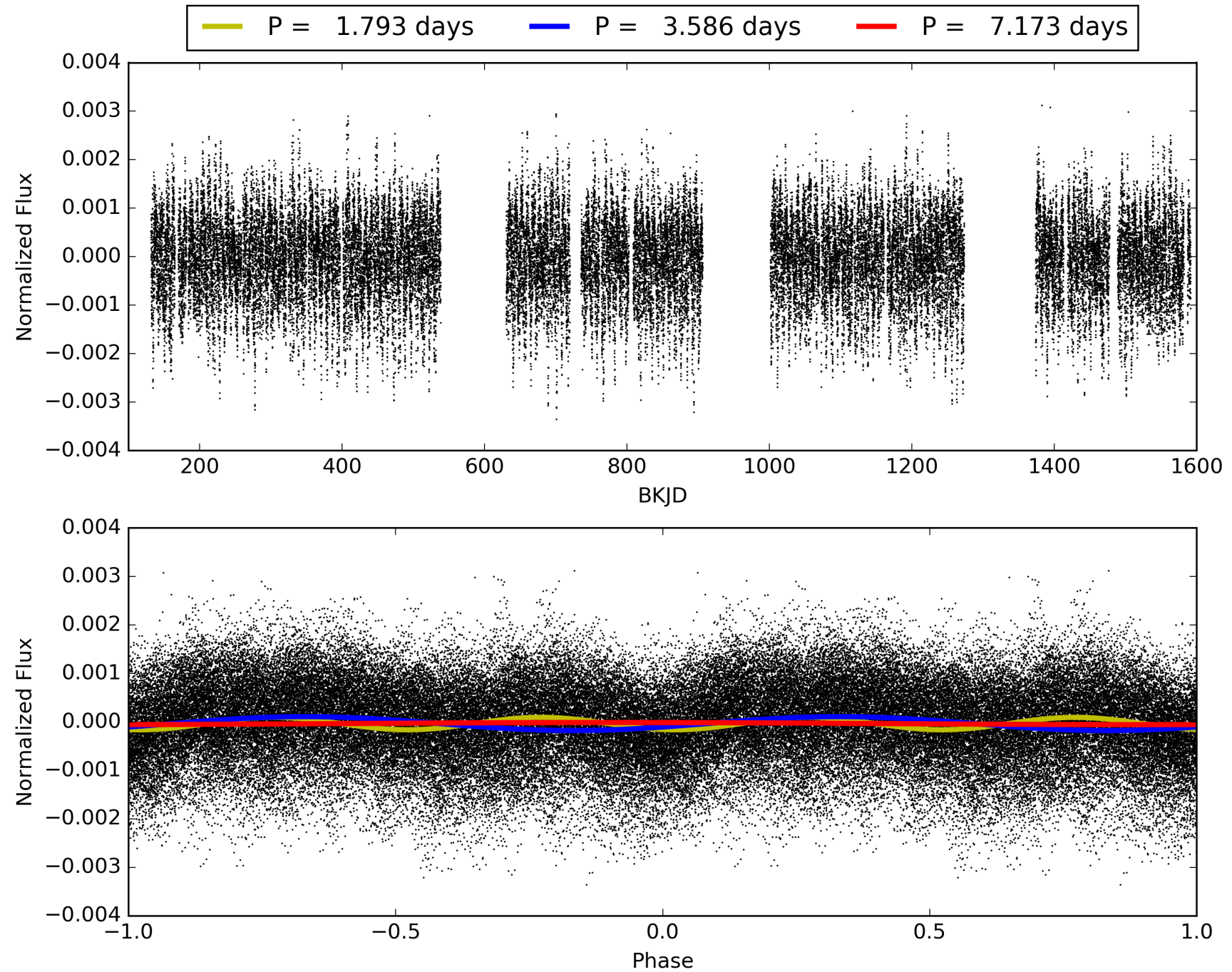
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:13:51 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003661206-01, PDC Light Curves

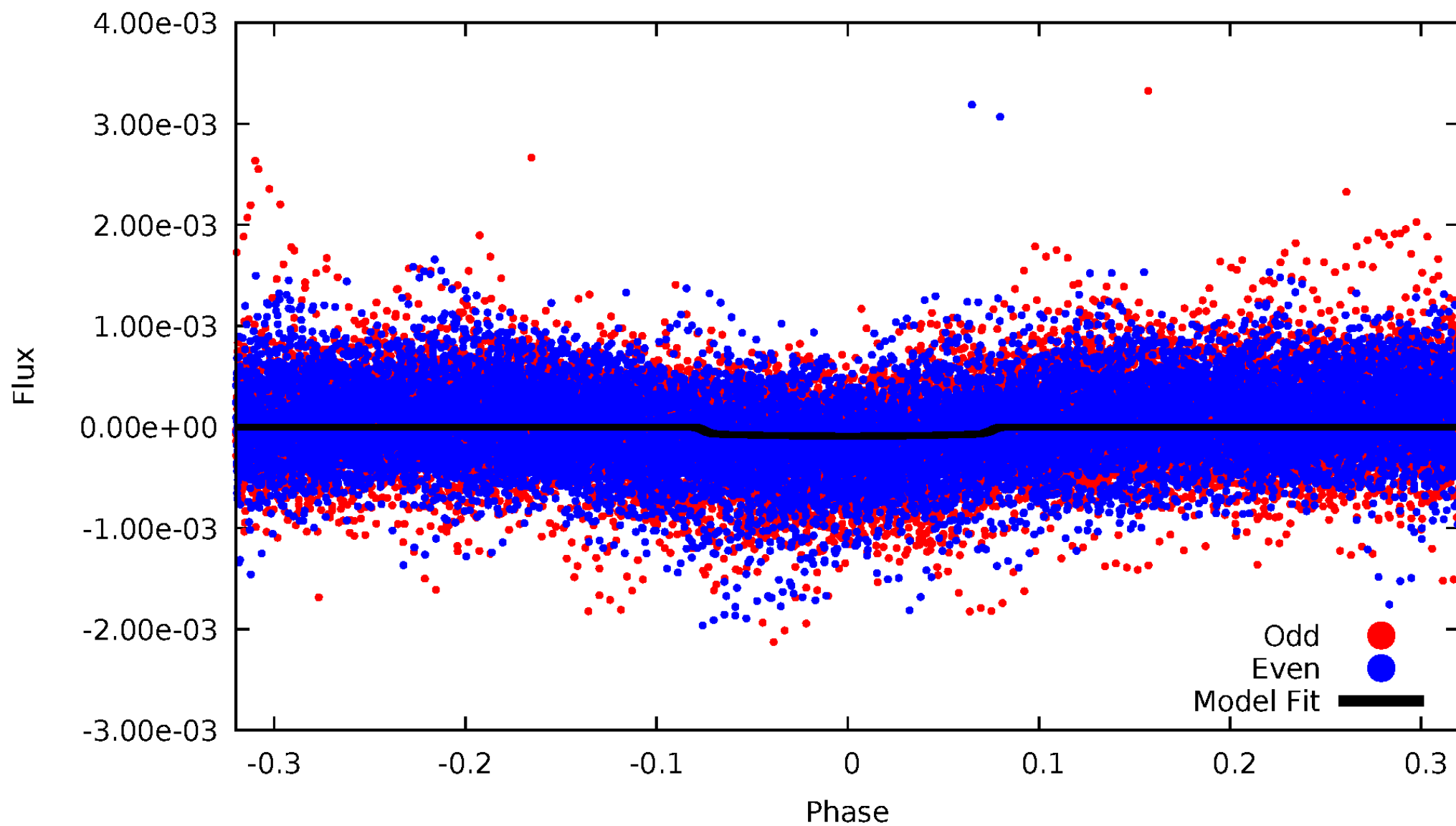


TCE 003661206-01



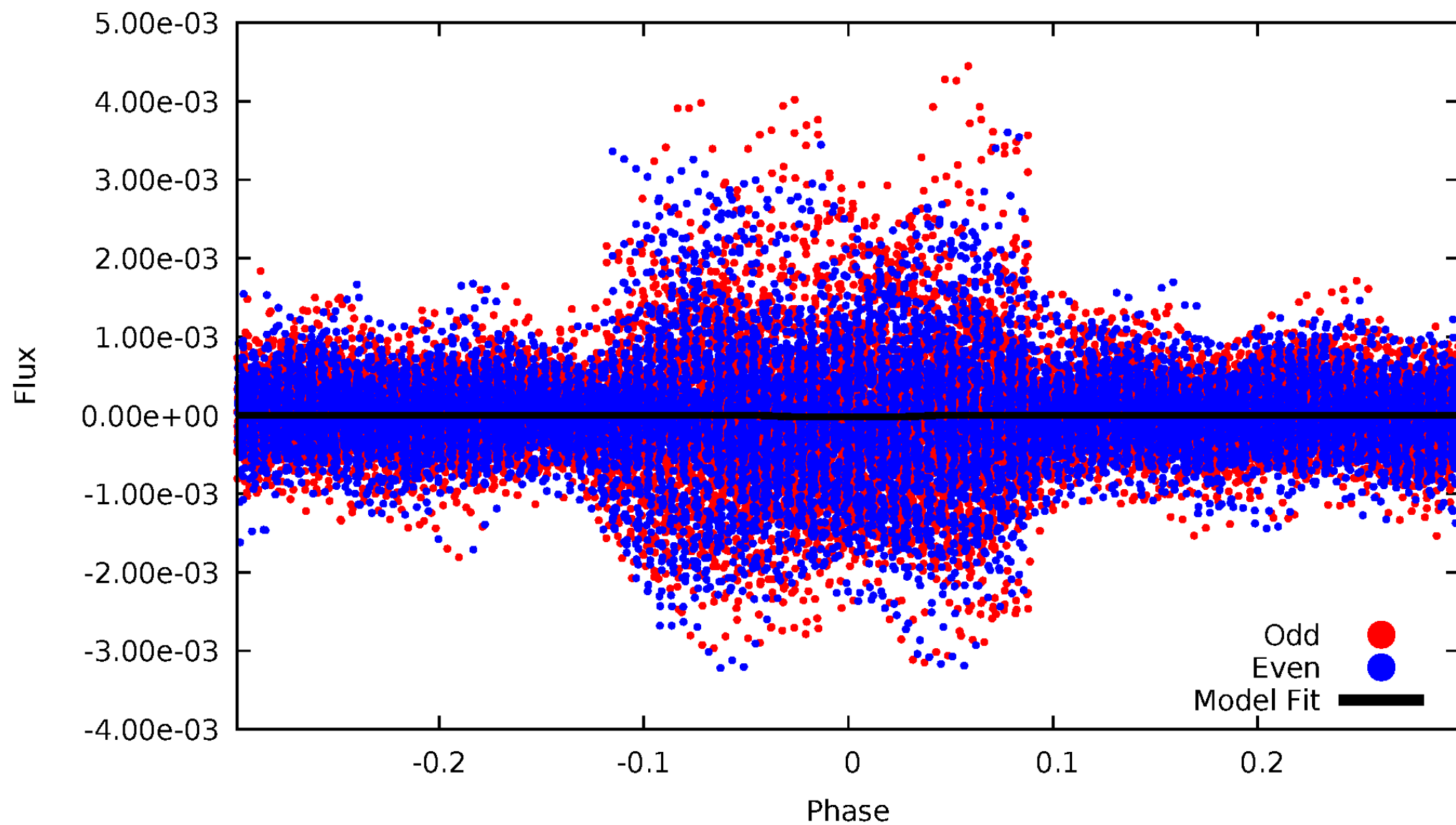
DV Odd/Even

TCE 003661206-01

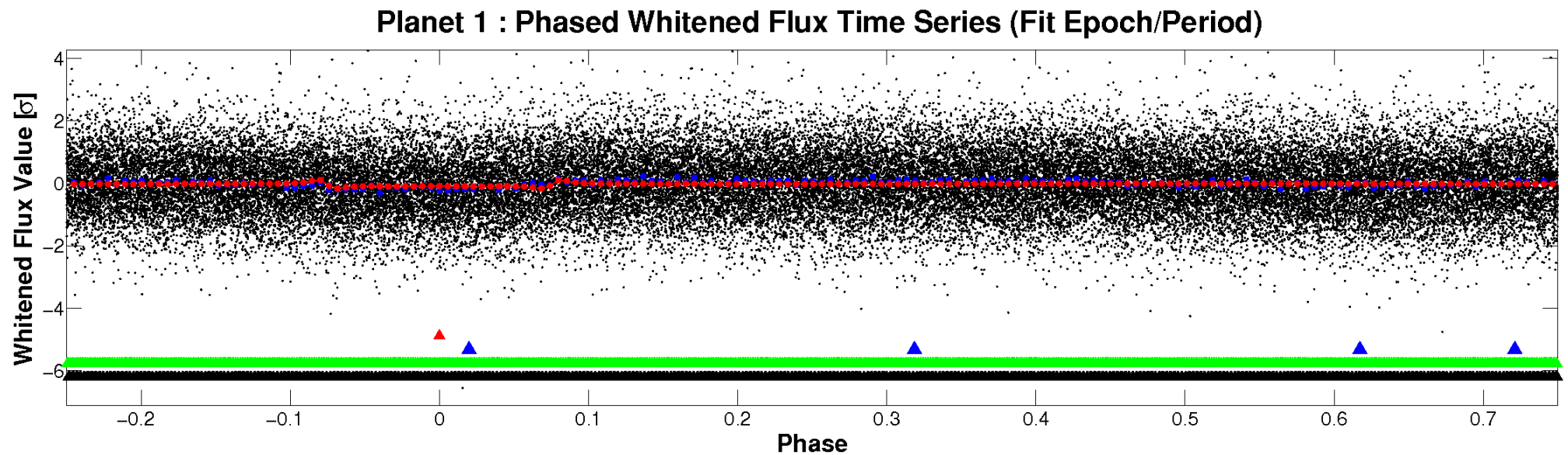
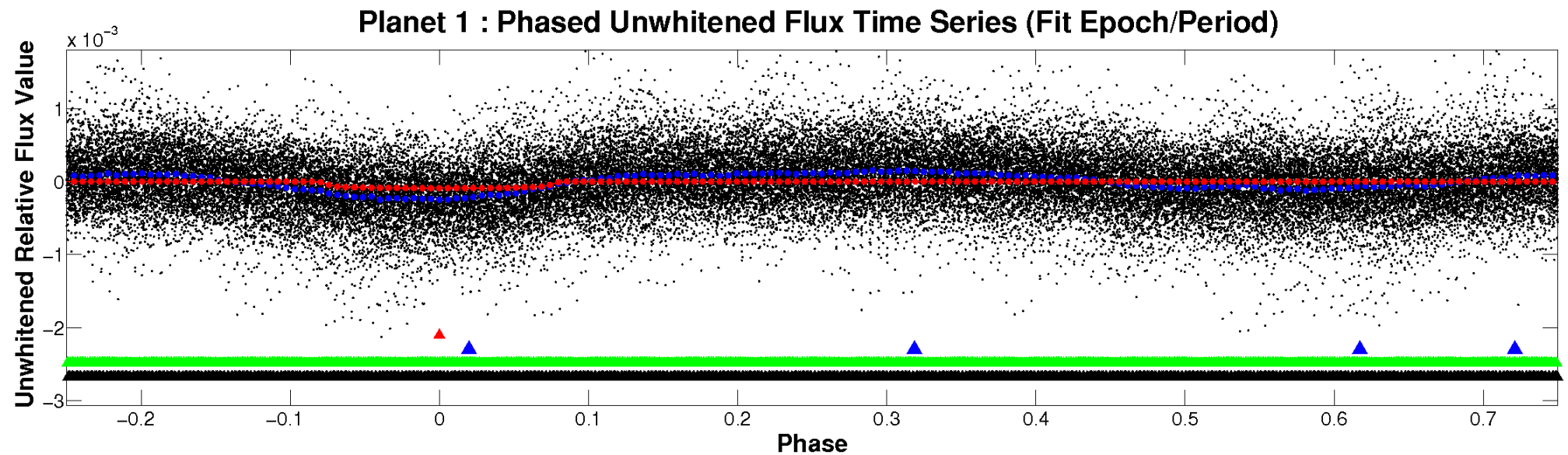


ALT Odd/Even

TCE 003661206-01

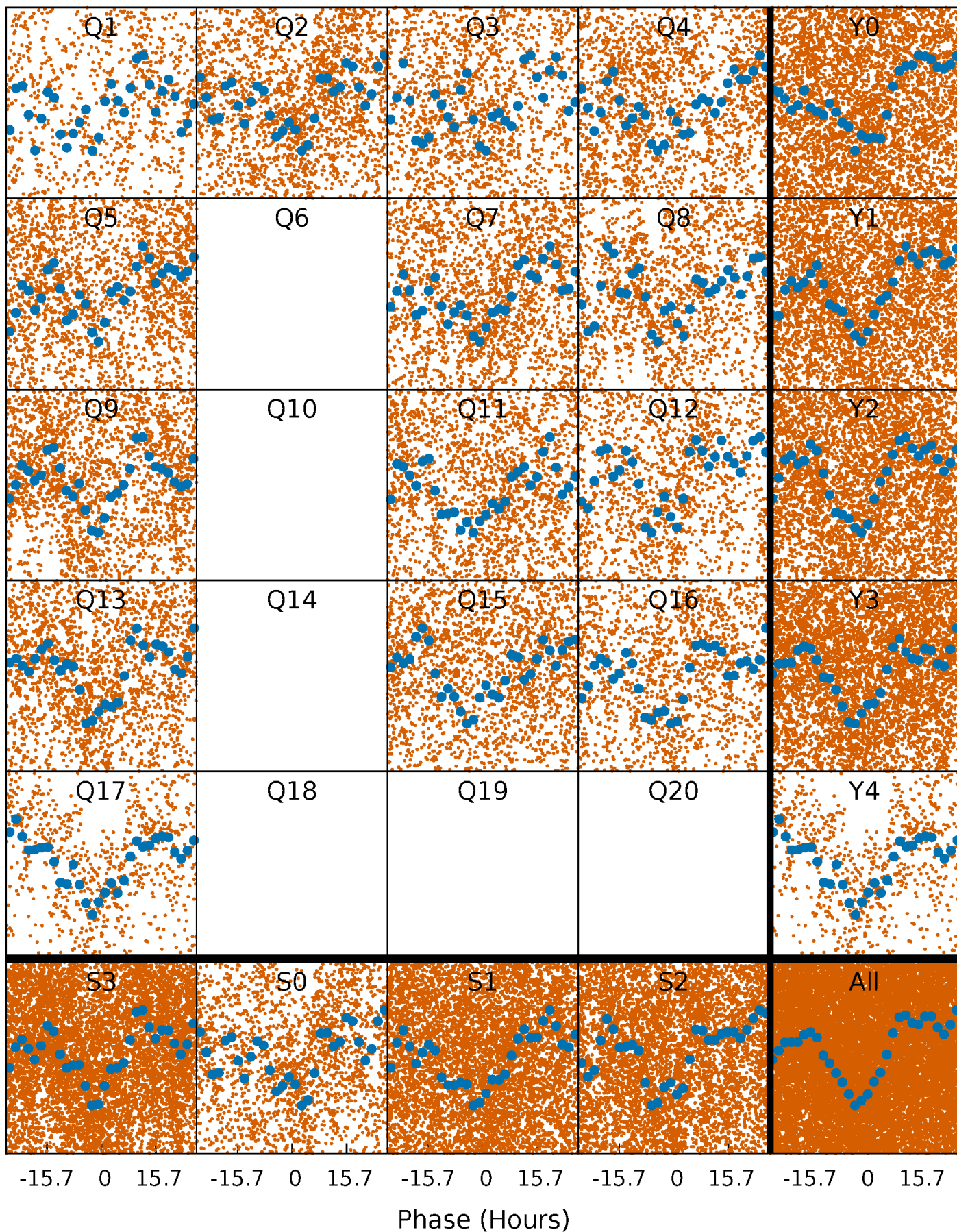


Non-Whitened Vs. Whitened Light Curve



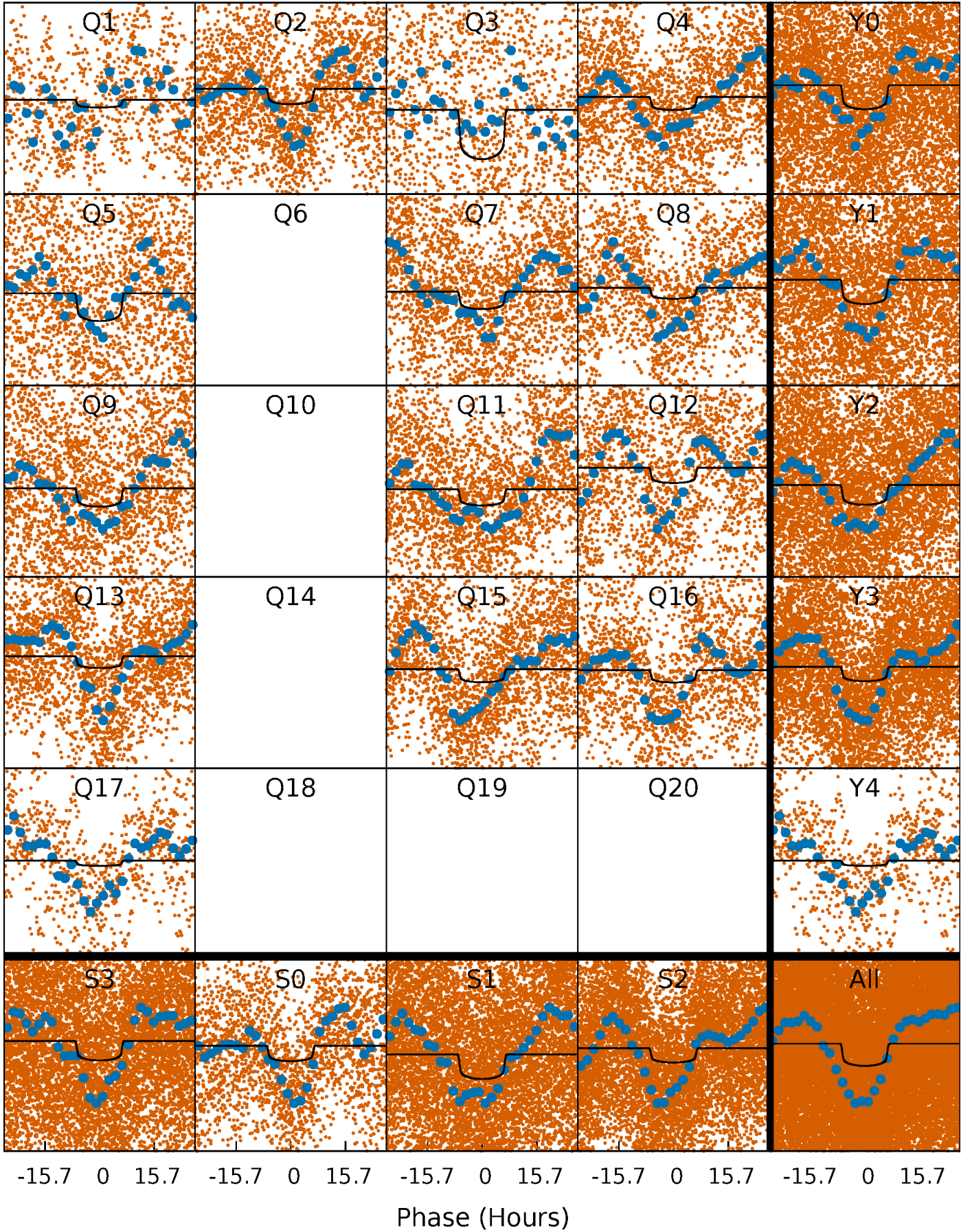
PDC Quarter-Phased Transit Curves

TCE 003661206-01 P= 3.586322 Days $T_0=134.766720$ (BKJD)



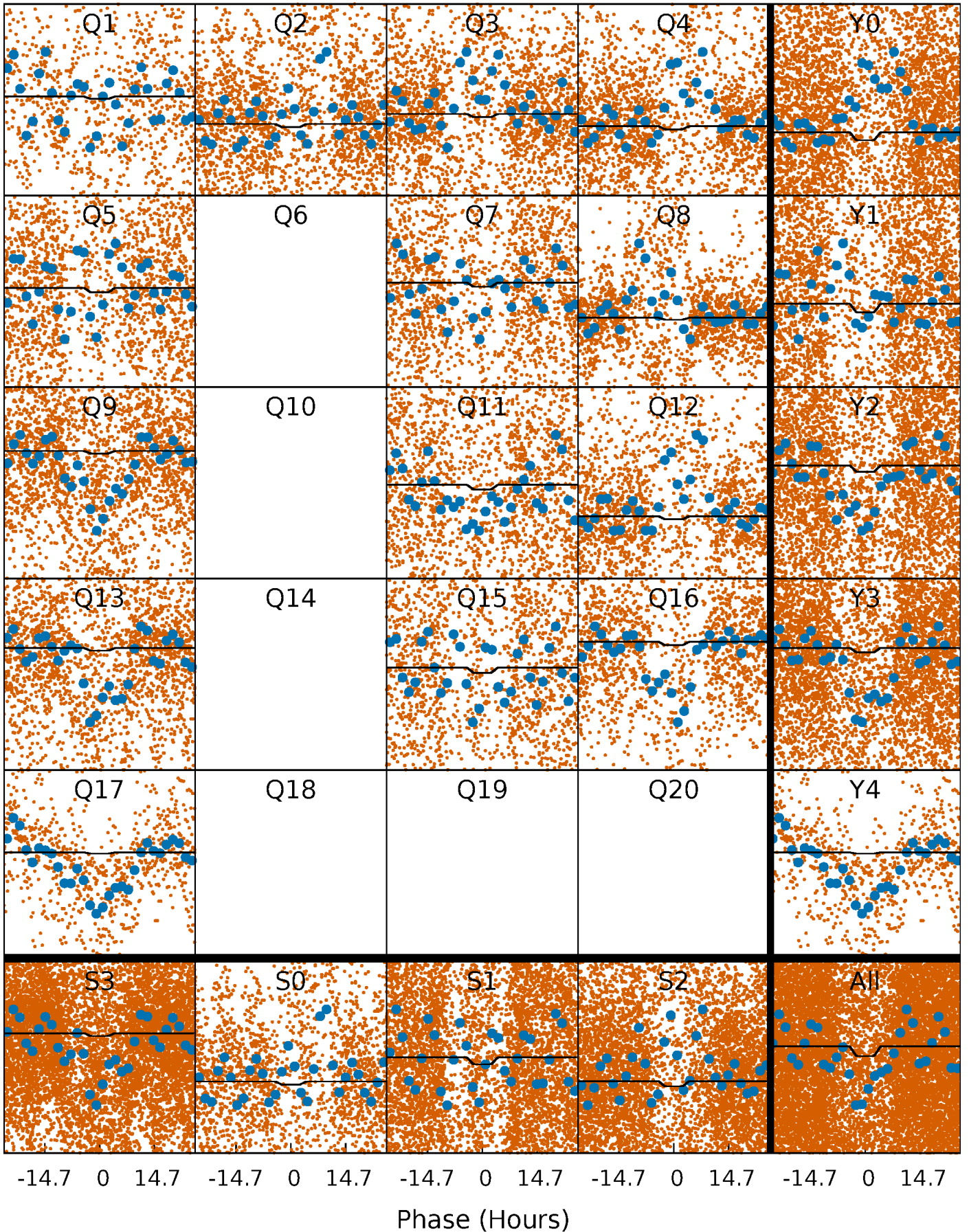
DV Quarter-Phased Transit Curves

TCE 003661206-01 P= 3.586322 Days $T_0=134.766720$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

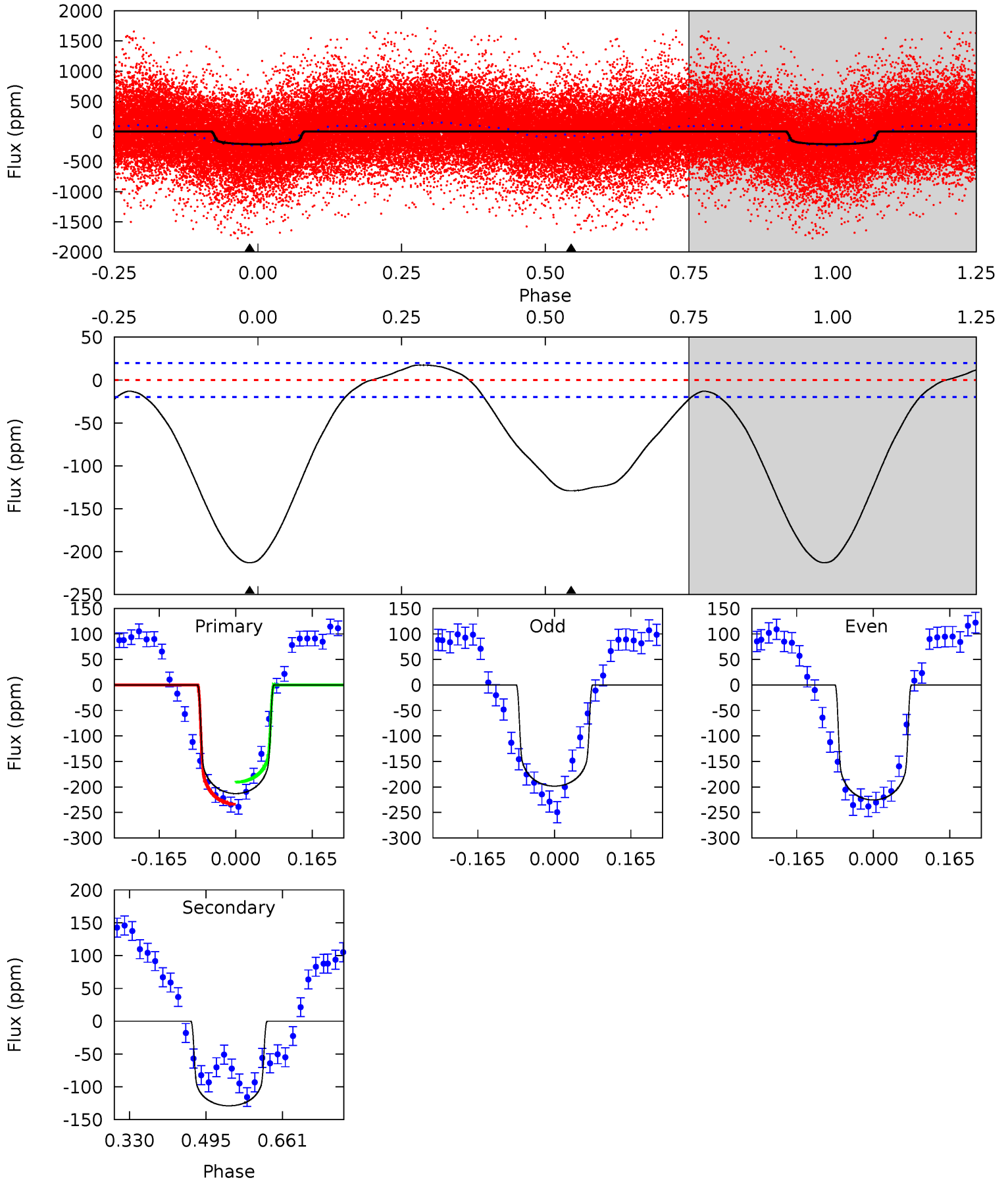
TCE 003661206-01 P= 3.586071 Days $T_0=134.776979$ (BKJD)



DV Model-Shift Uniqueness Test

003661206-01, P = 3.586322 Days, E = 131.180398 Days

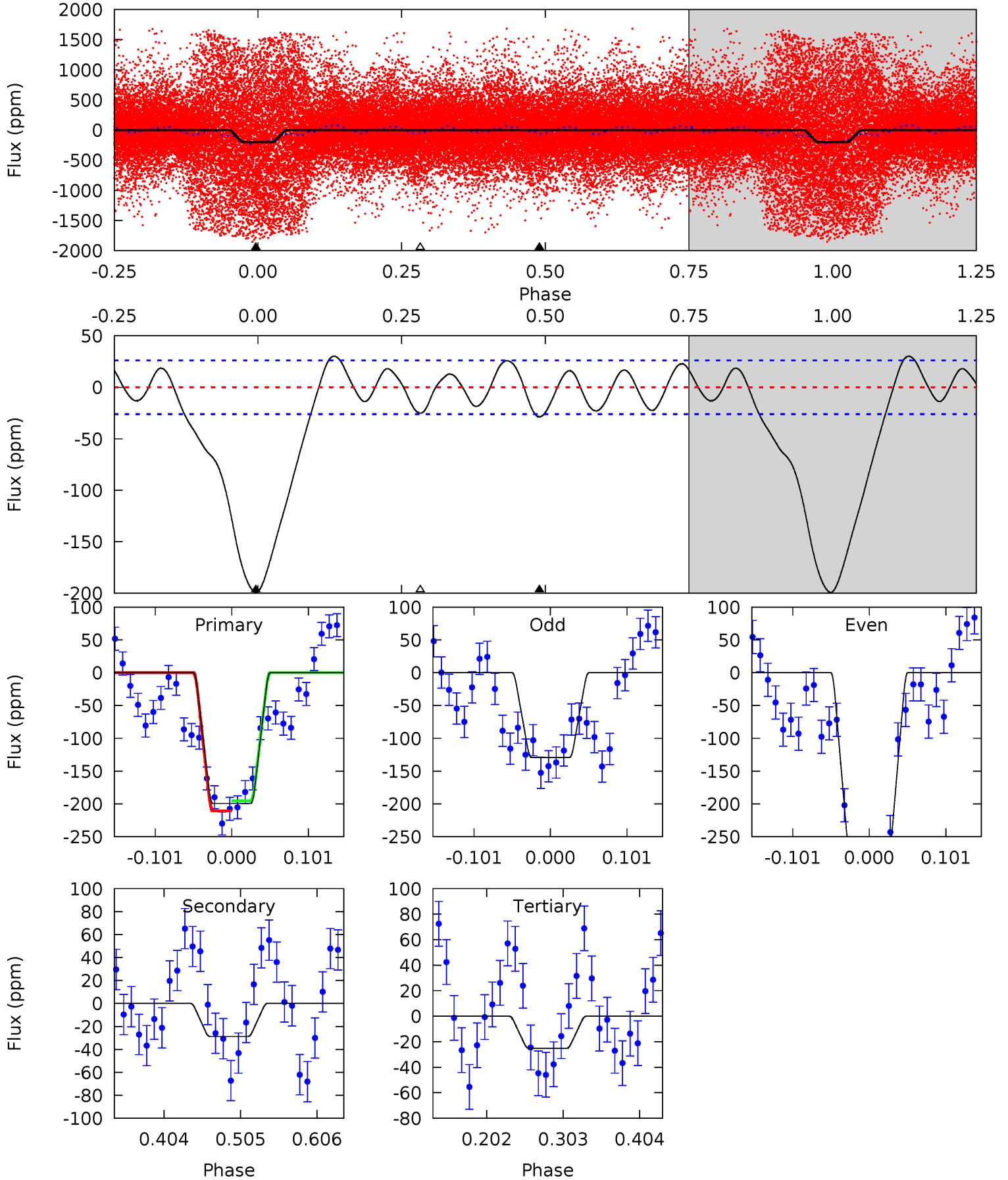
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.2	29.2	0	0	4.46	1.39	4.00	48.2	48.2	29.2	29.2	3.07	1.11	0.08	4.96



Alt Model-Shift Uniqueness Test

003661206-01, P = 3.586071 Days, E = 131.190908 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.8	5.03	4.40	0	4.56	1.64	2.80	30.4	34.8	0.64	5.03	12.4	0.56	0.13	1.33



Stellar Parameters For KIC 003661206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7236^{+230}_{-316}	$4.180^{+0.105}_{-0.195}$	$-0.040^{+0.200}_{-0.350}$	$1.645^{+0.540}_{-0.291}$	$1.494^{+0.221}_{-0.221}$	$0.473^{+0.278}_{-0.234}$
	+3%/-4%	+3%/-5%	+500%/-875%	+33%/-18%	+15%/-15%	+59%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003661206-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-129±4	$1.82^{+0.37}_{-0.21}$	2531^{+213}_{-148}	7808^{+427}_{-476}	58^{+16}_{-16}
Alt.	-29±6	$0.77^{+0.19}_{-0.16}$	2524^{+188}_{-158}	8379^{+1318}_{-1035}	72^{+48}_{-26}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

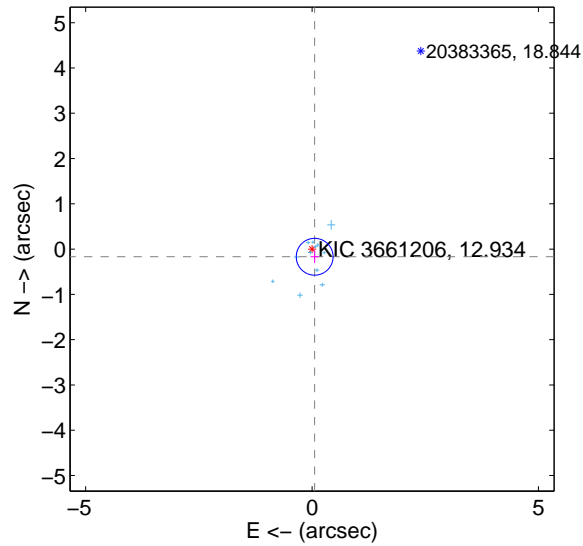
Supplemental centroid analysis for 003661206-01. Kepler magnitude: 12.93. Transit SNR 9.78

There are 12 quarters with good PRF difference image offsets

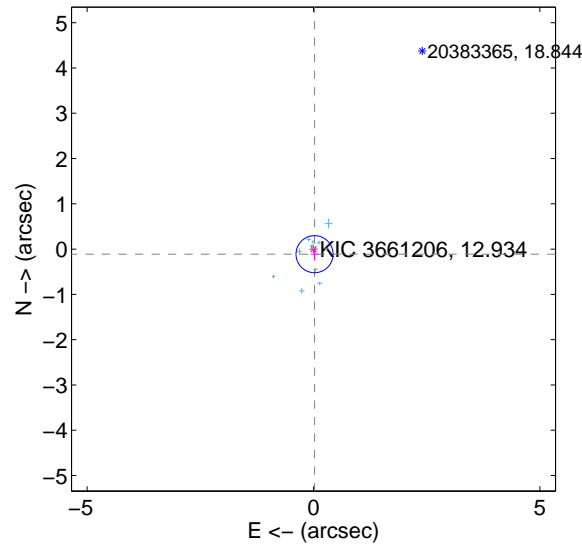
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.179 ± 0.136	1.32	-0.058 ± 0.092	-0.169 ± 0.140
PRF-fit source offset from KIC position	0.115 ± 0.136	0.84	-0.023 ± 0.089	-0.113 ± 0.138
photometric centroid source offset	1.60 ± 0.95	1.68	1.54 ± 0.97	0.44 ± 0.69

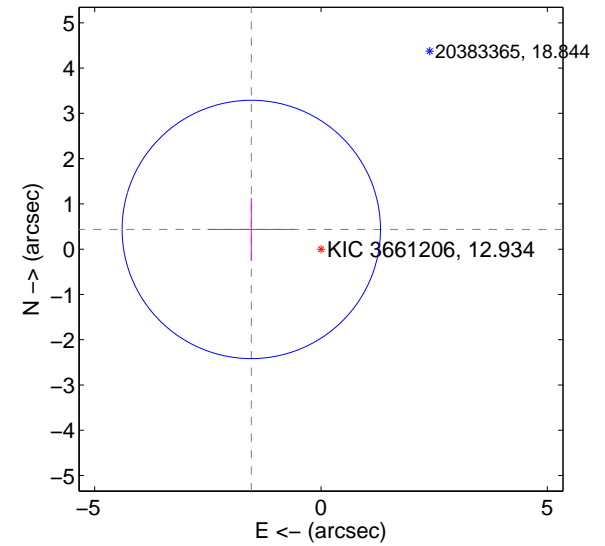
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

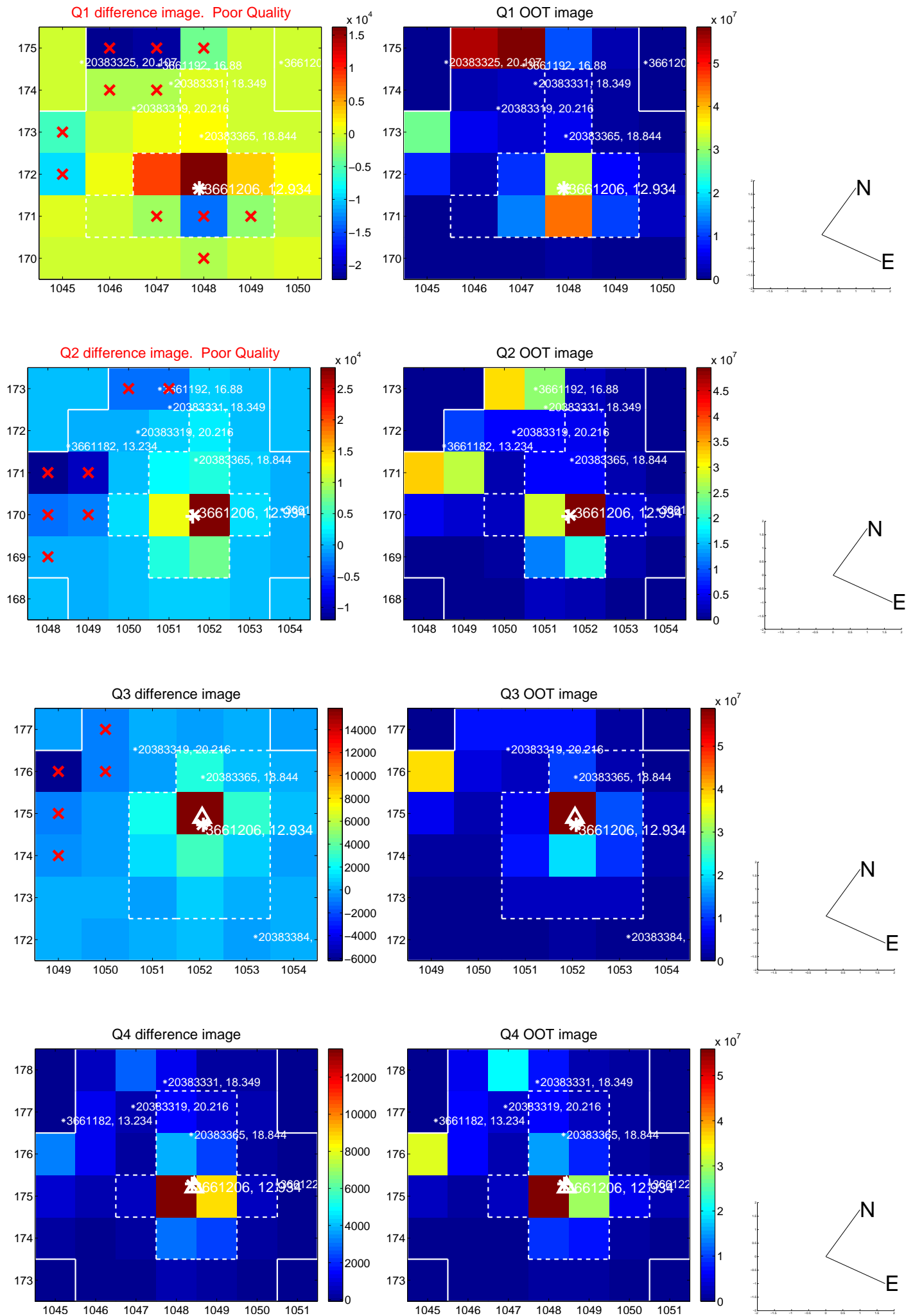


offset from photometric centroids

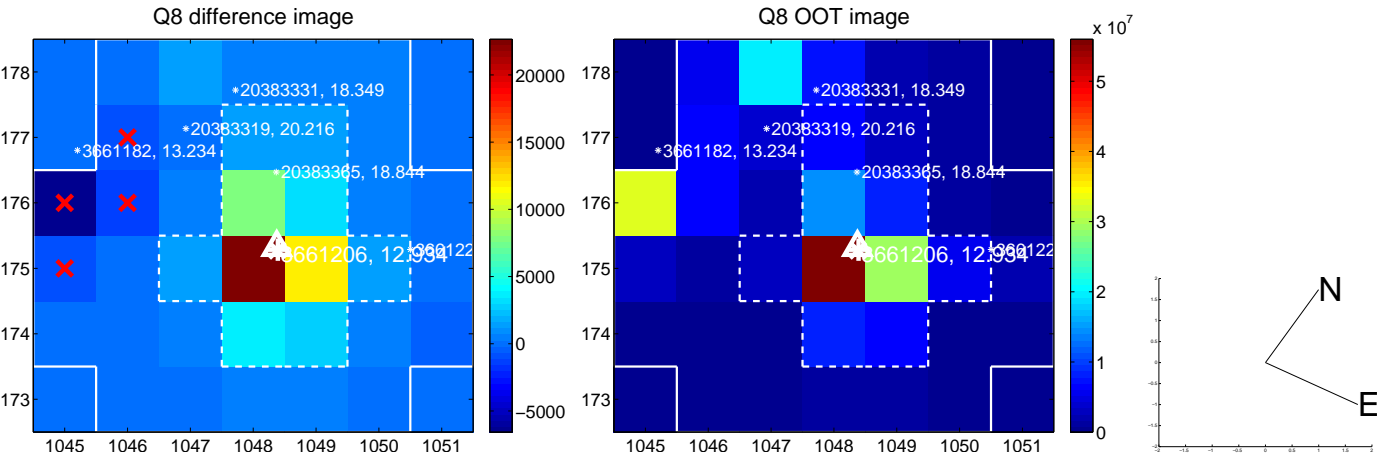
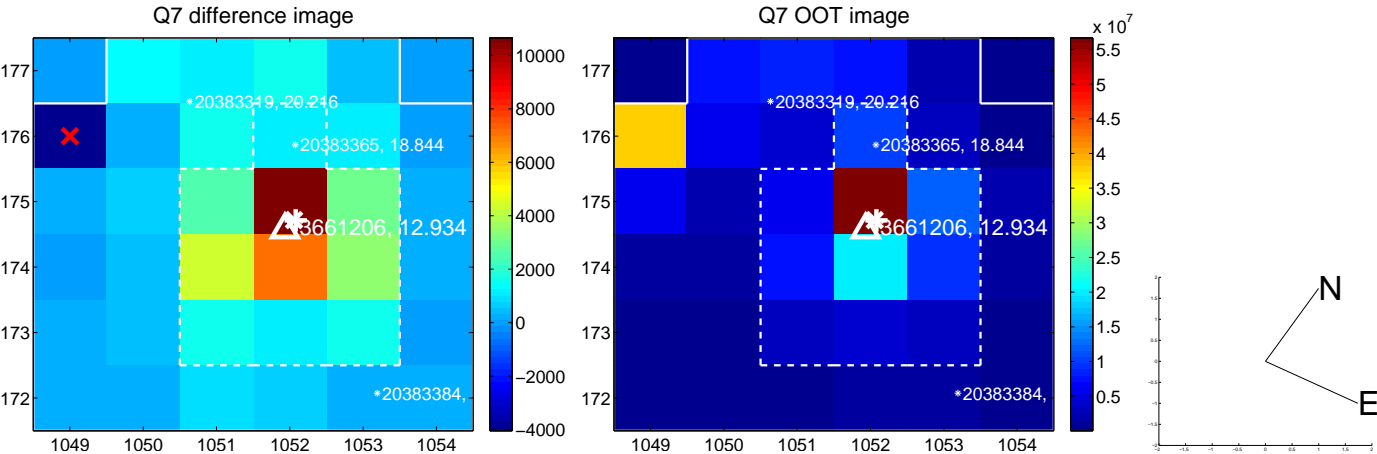
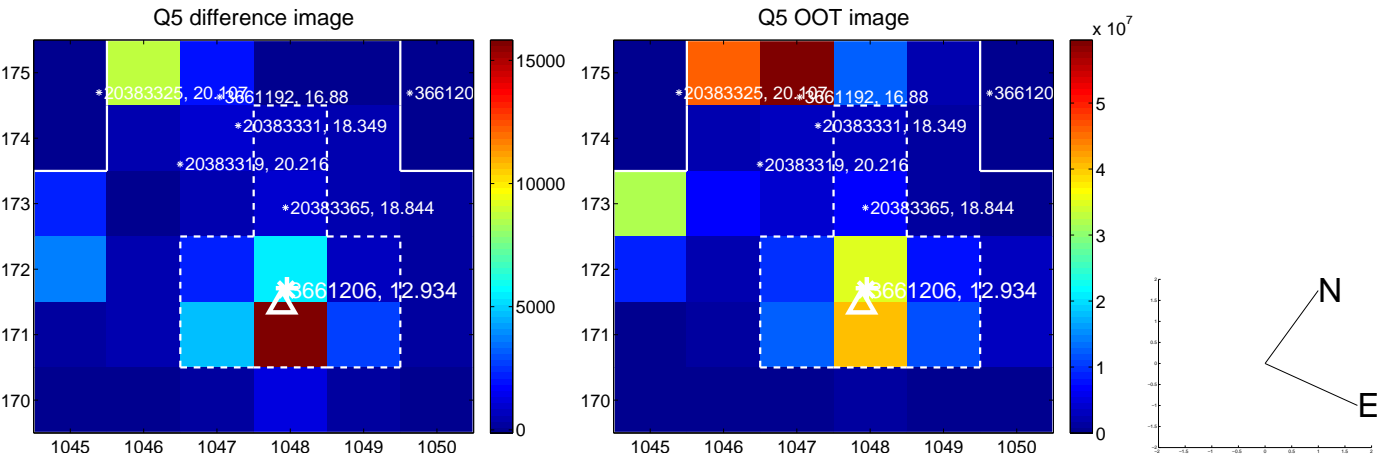


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

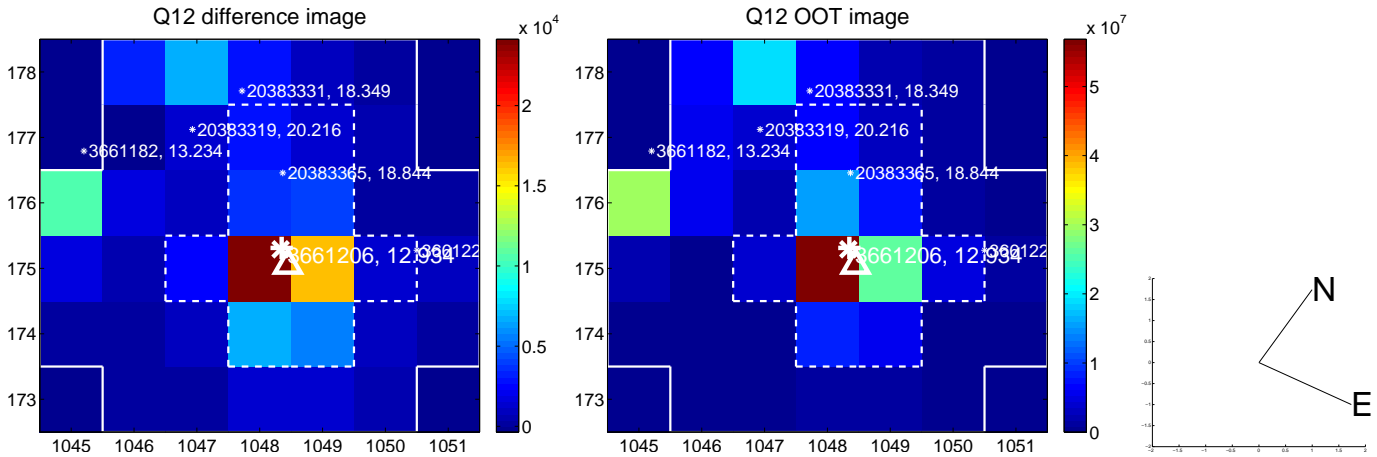
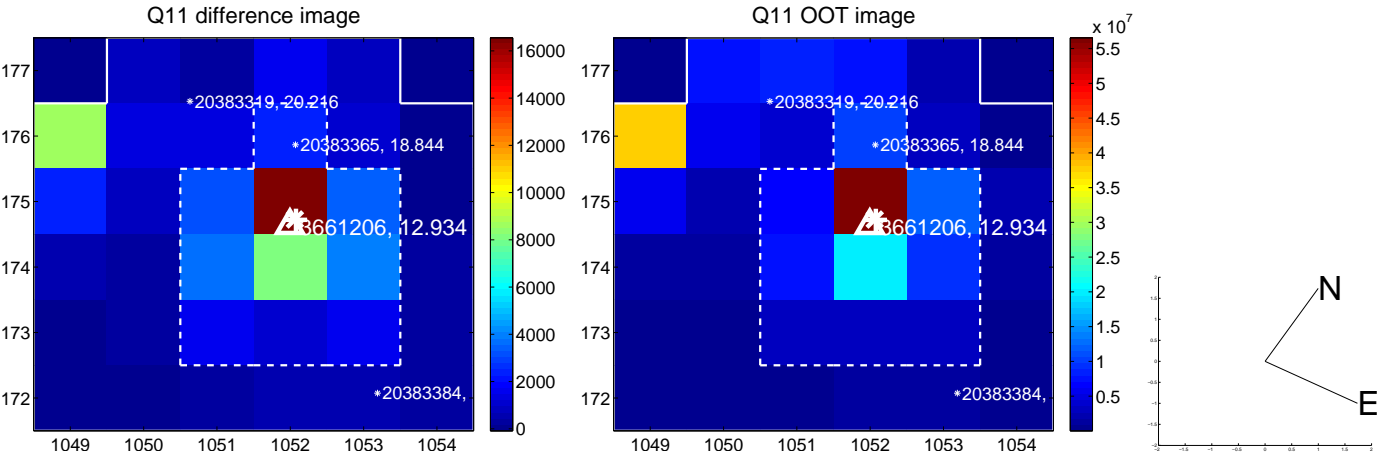
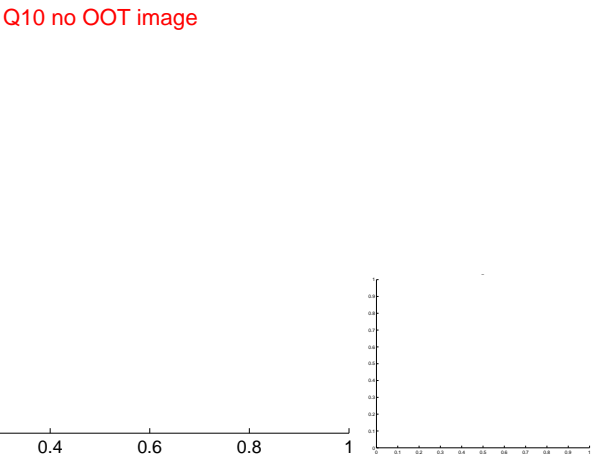
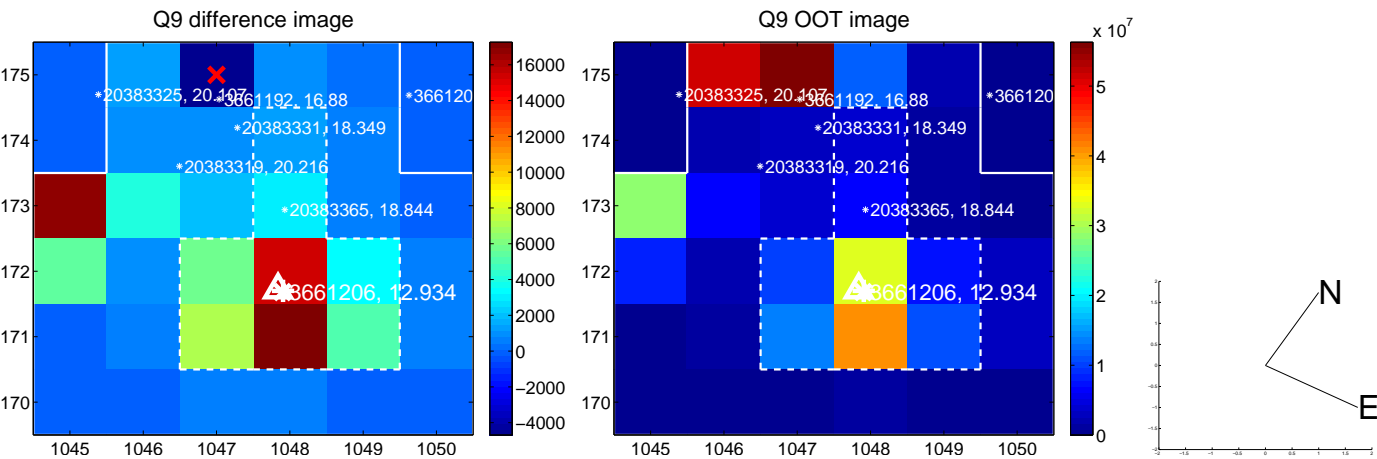
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



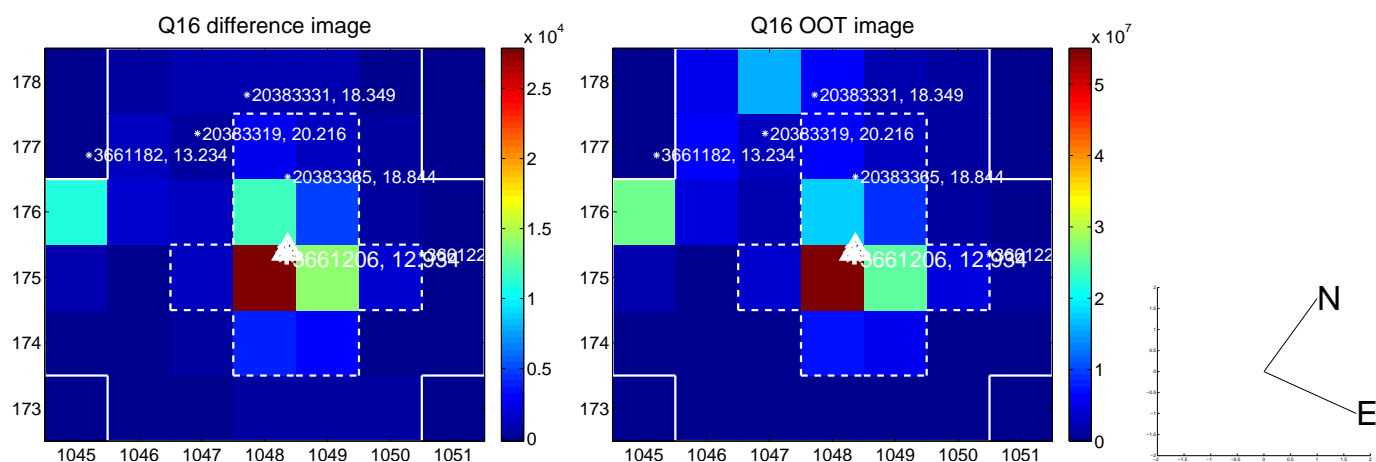
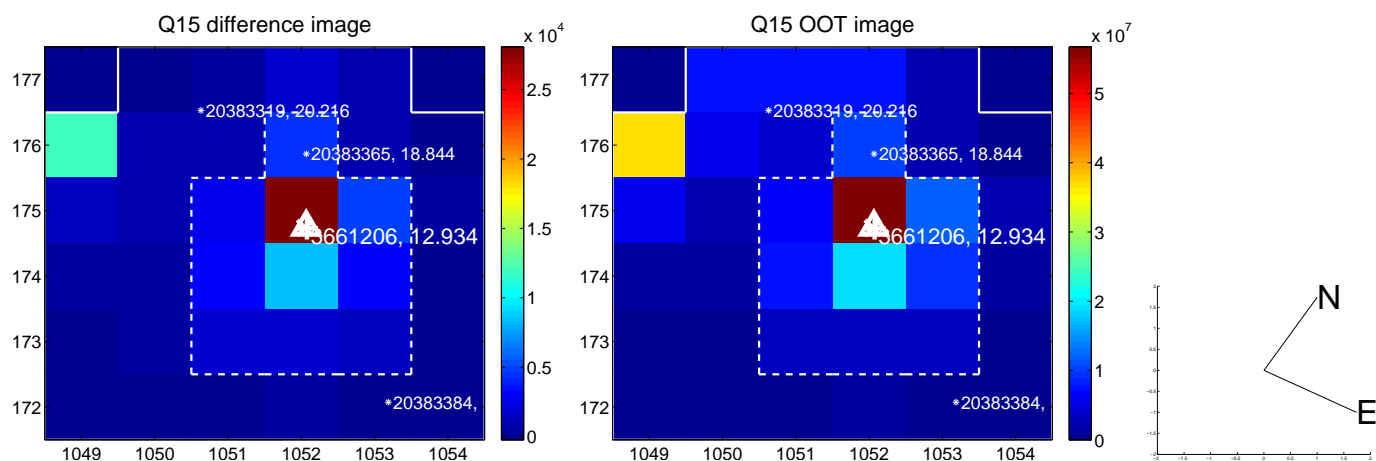
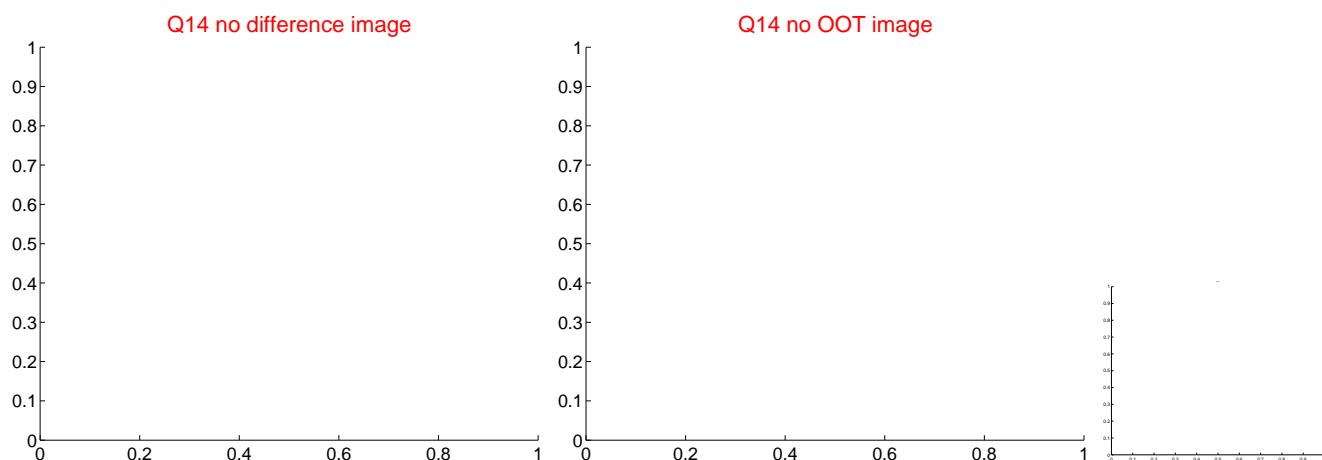
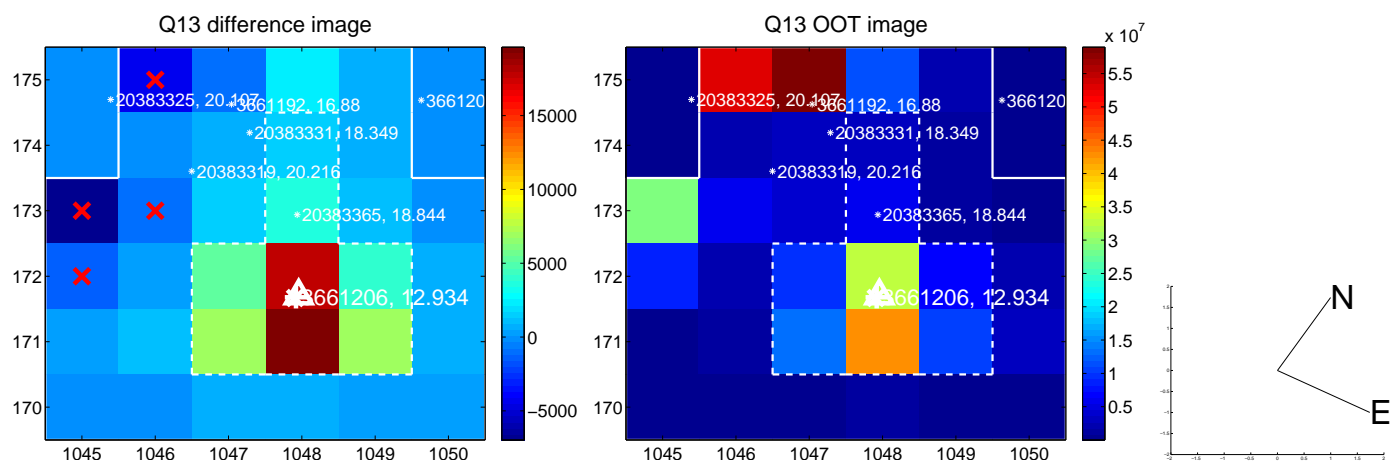
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



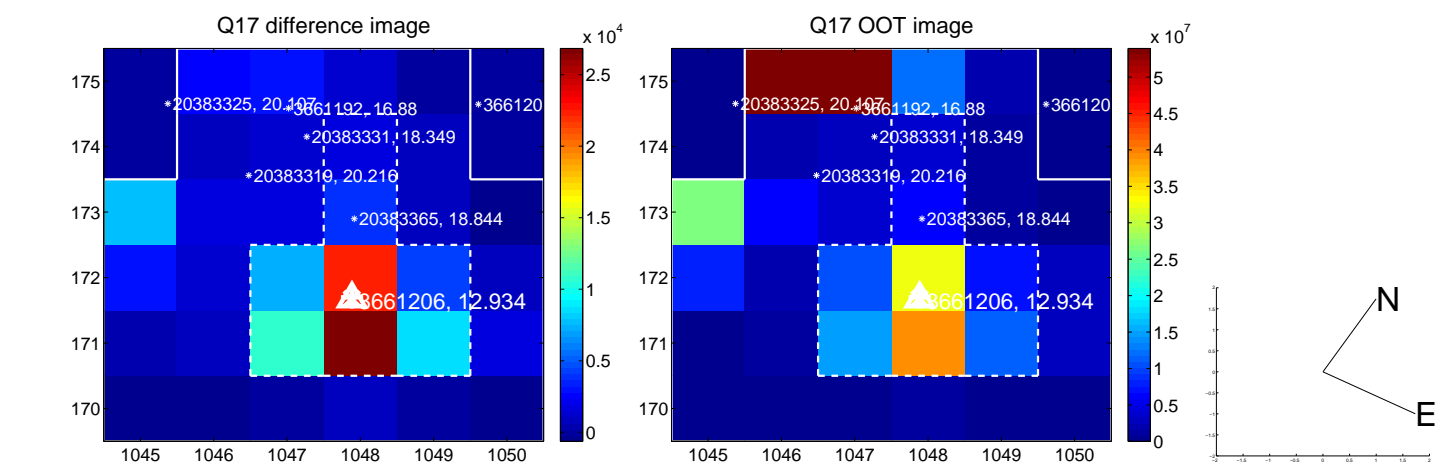
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



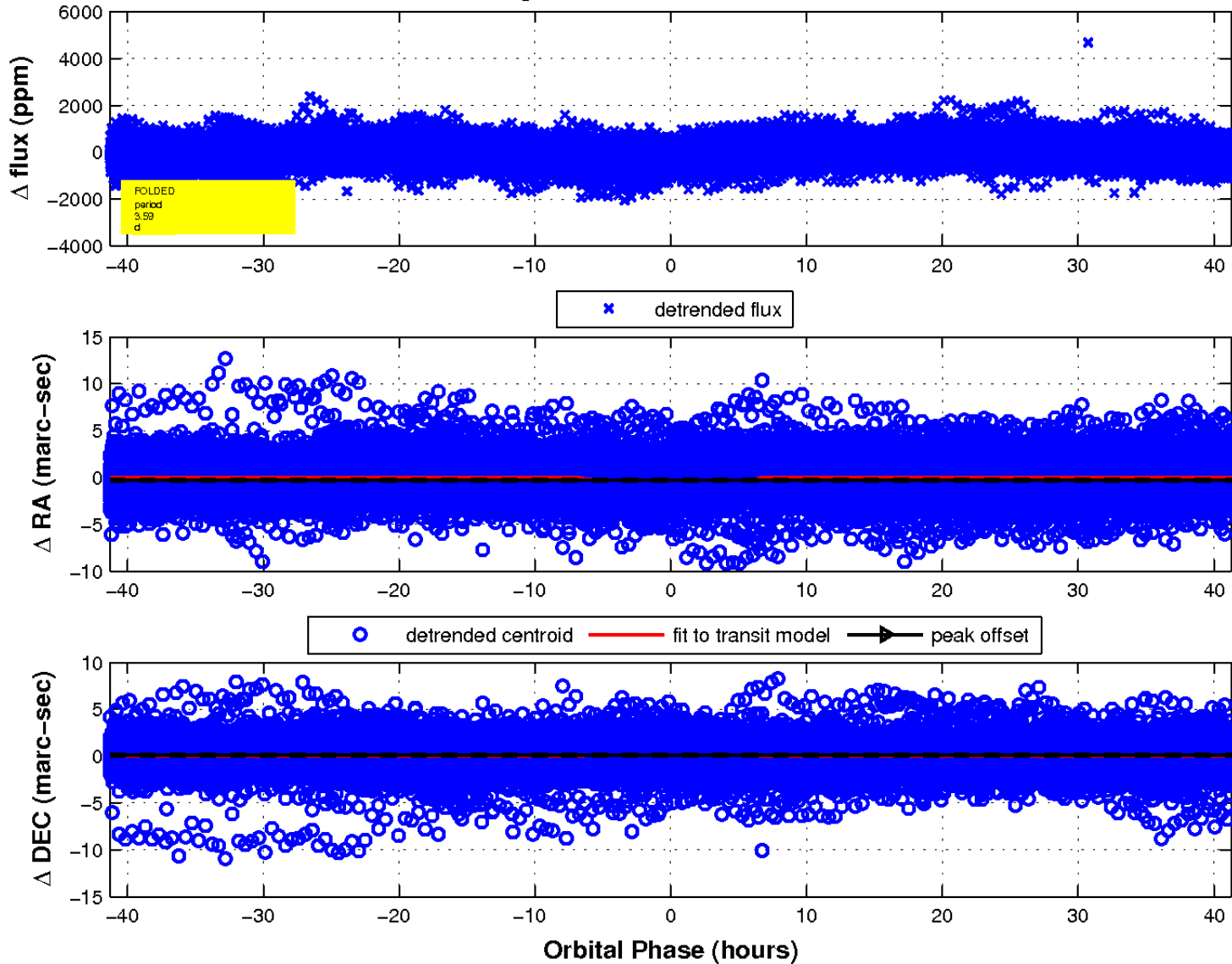
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

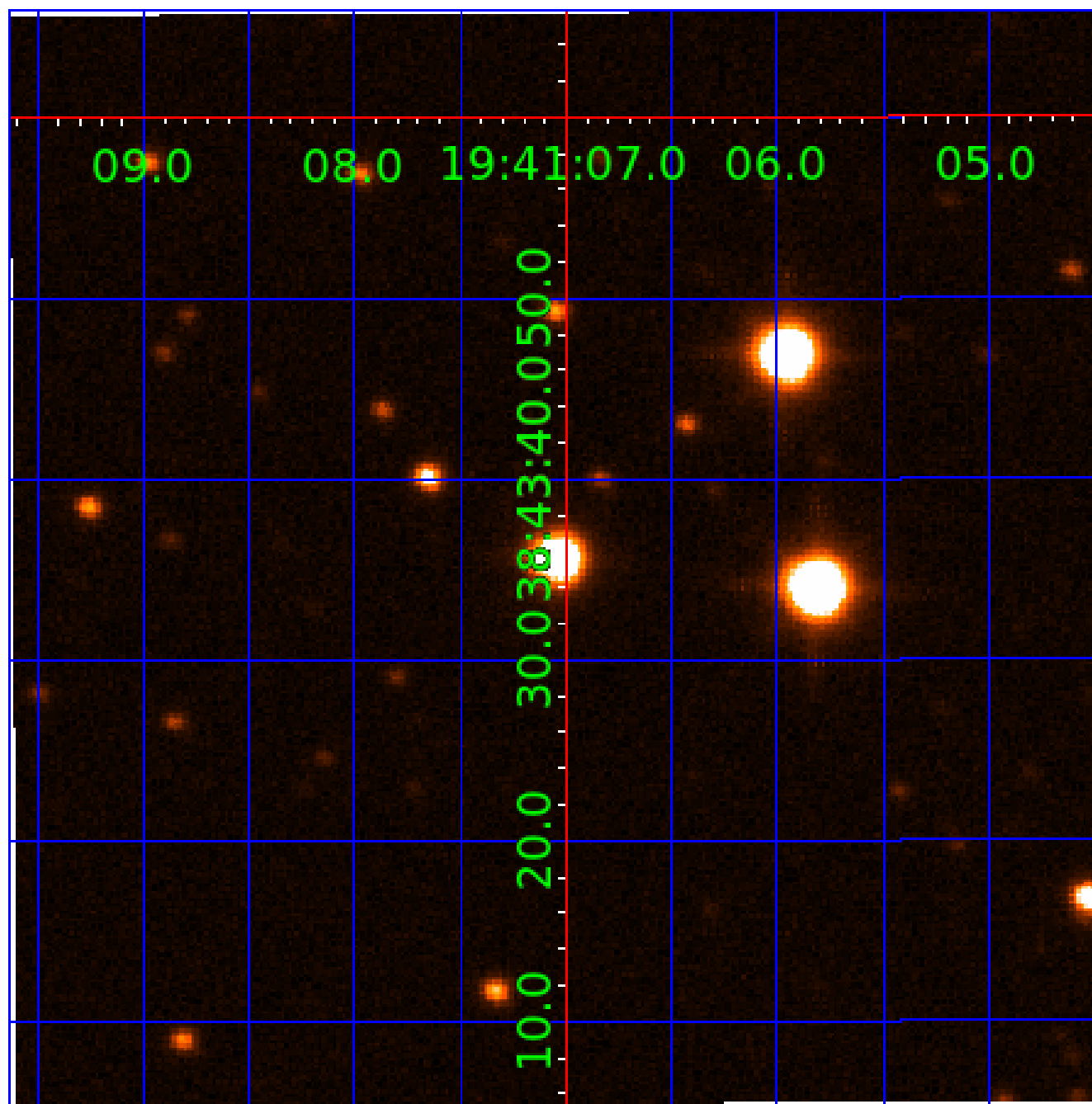


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 003661206

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
003661206-01	OBS	No	3.586322	134.766720	89.1	13.766	9.0	9.8	1.65	7236	1.79	2418.06
003661206-02	OBS	No	431.429911	148.112115	1188.2	17.528	11.5	10.8	1.65	7236	6.68	4.07
003661206-03	OBS	No	1.410820	131.915654	114.5	6.184	11.3	12.4	1.65	7236	2.92	8388.87
003661206-04	OBS	No	1.410858	132.604741	124.2	6.538	13.5	16.5	1.65	7236	2.89	8388.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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003661206-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
003661206-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003661206-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

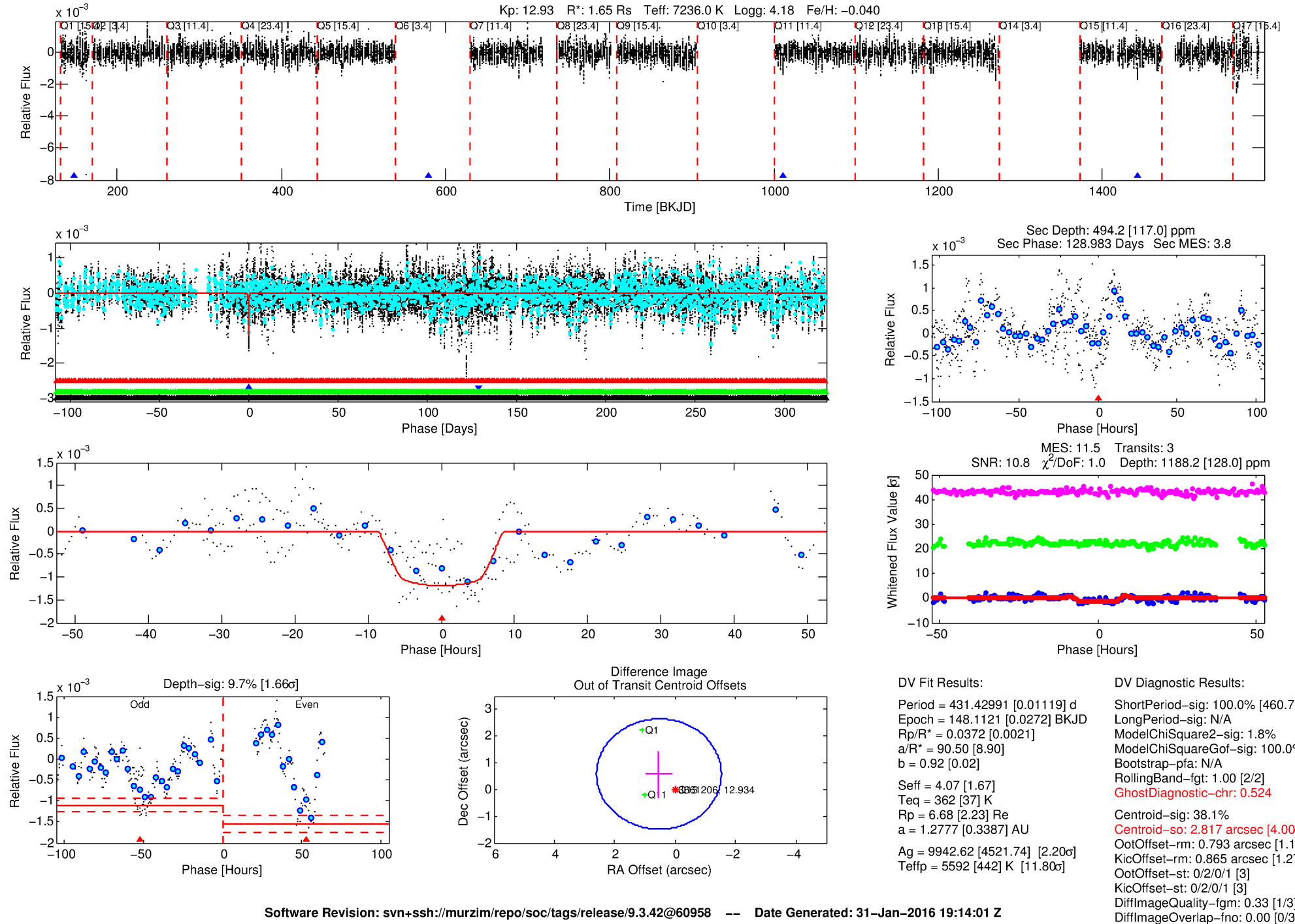
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003661206-02

No Significant Match Found

DV One-Page Summary

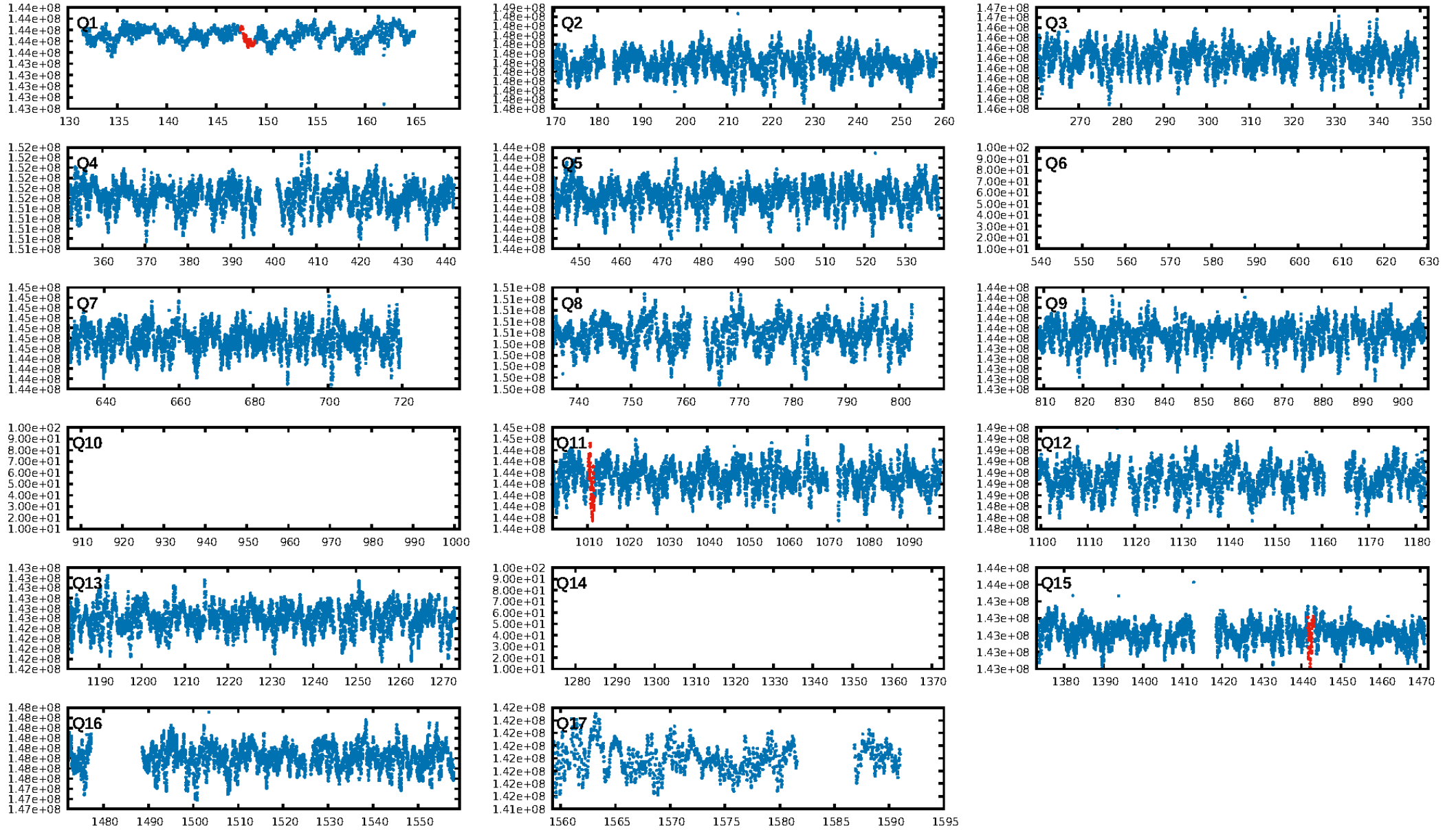
KIC: 3661206 Candidate: 2 of 4 Period: 431.430 d



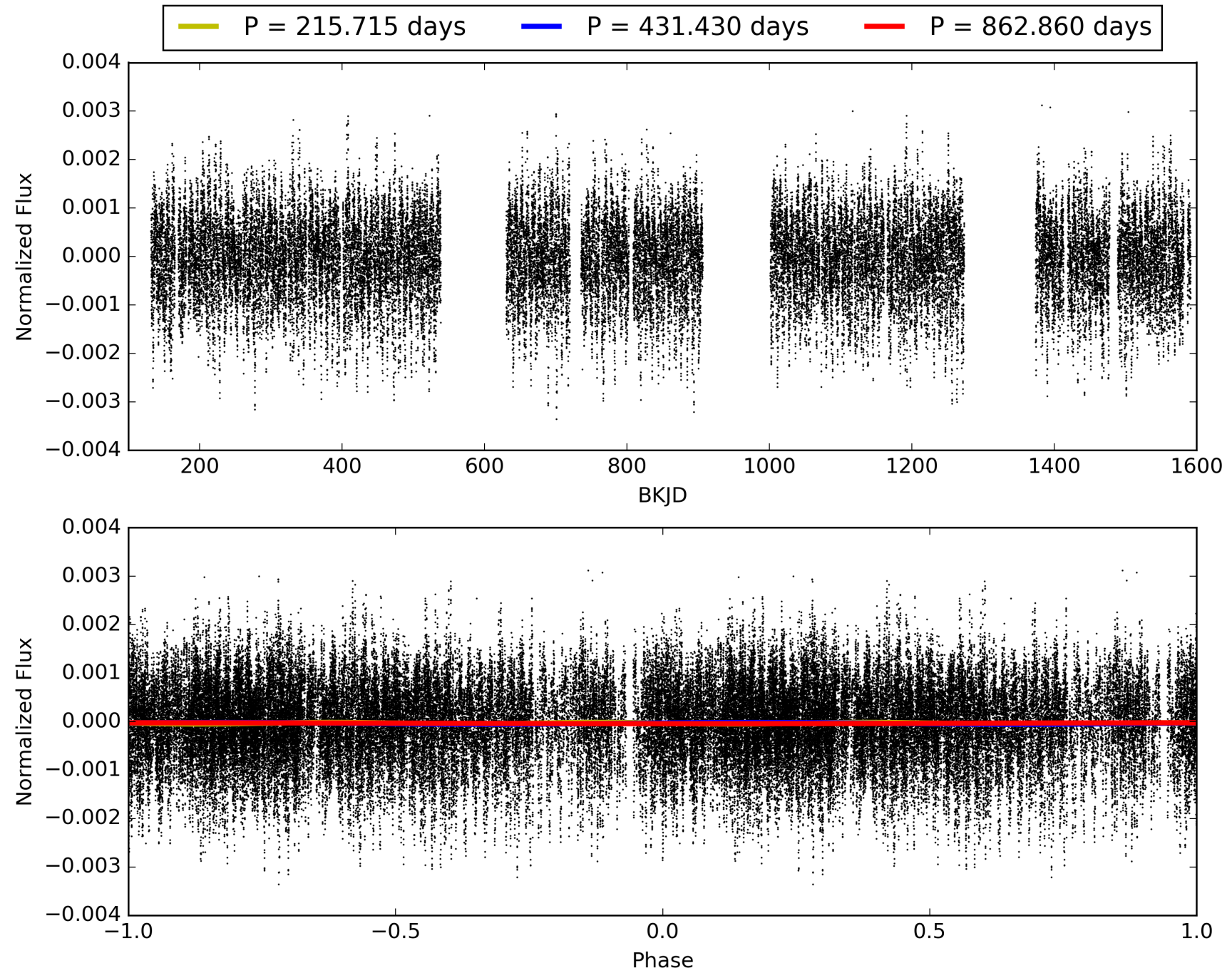
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:14:01 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003661206-02, PDC Light Curves

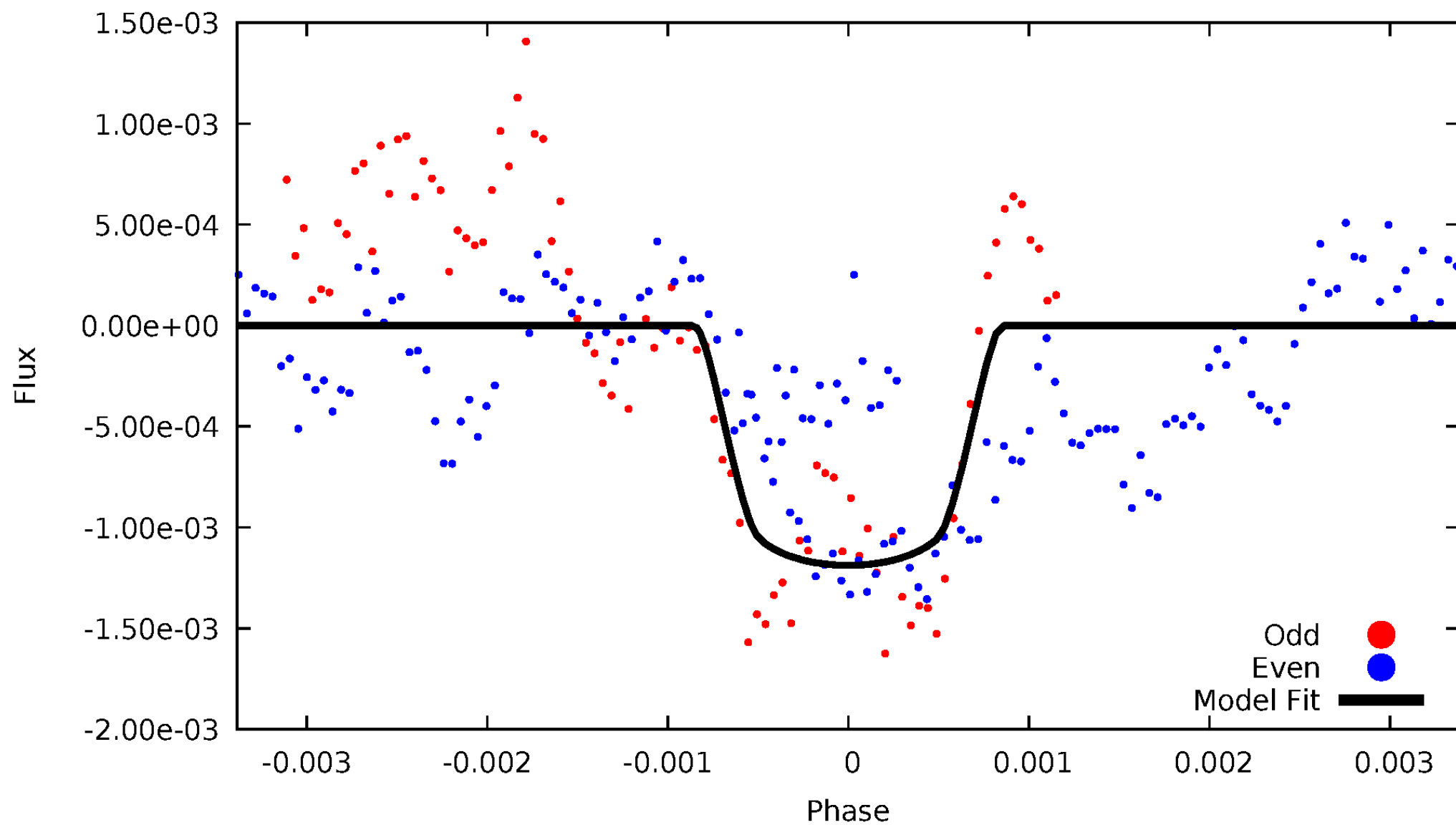


TCE 003661206-02



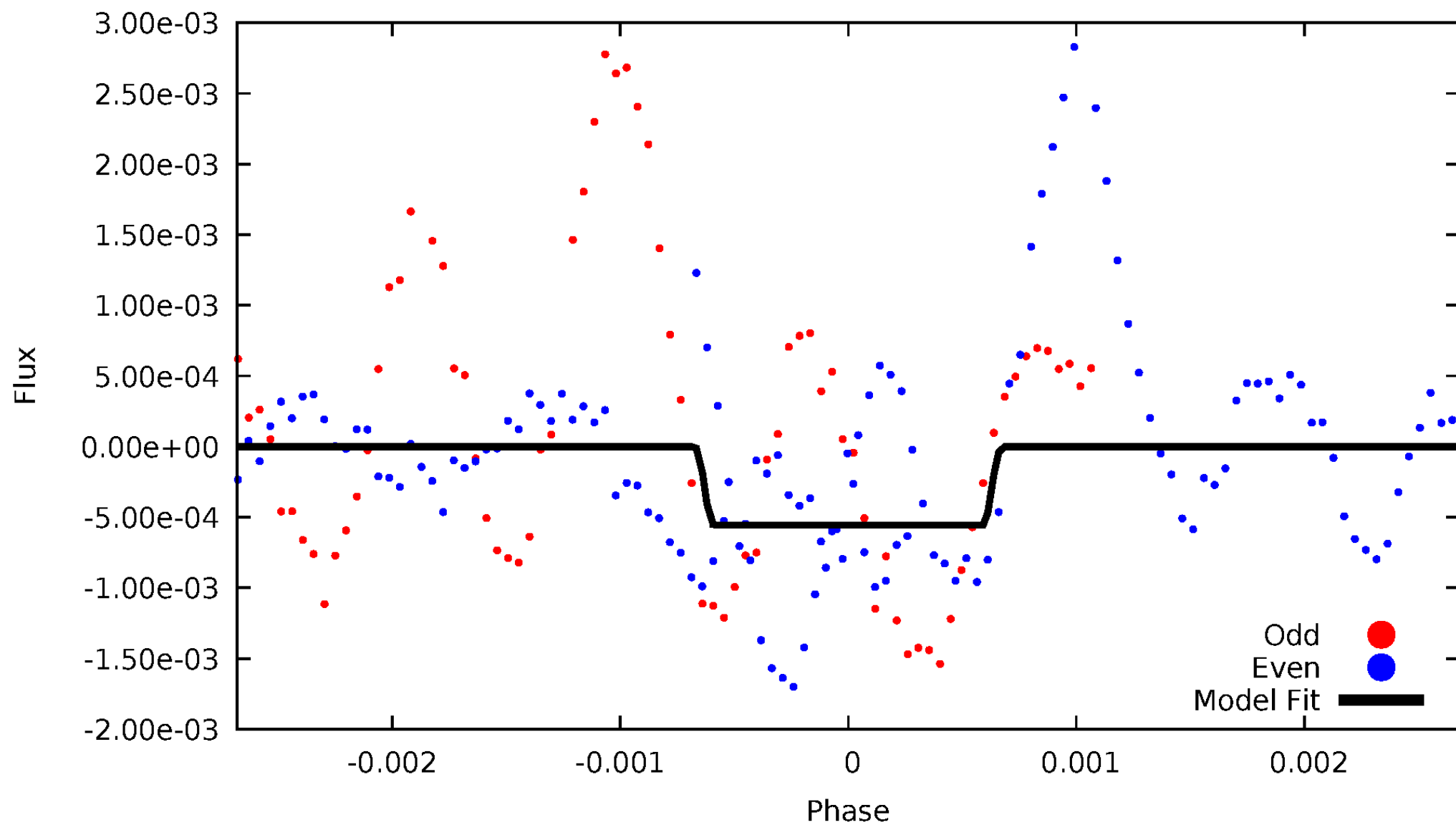
DV Odd/Even

TCE 003661206-02



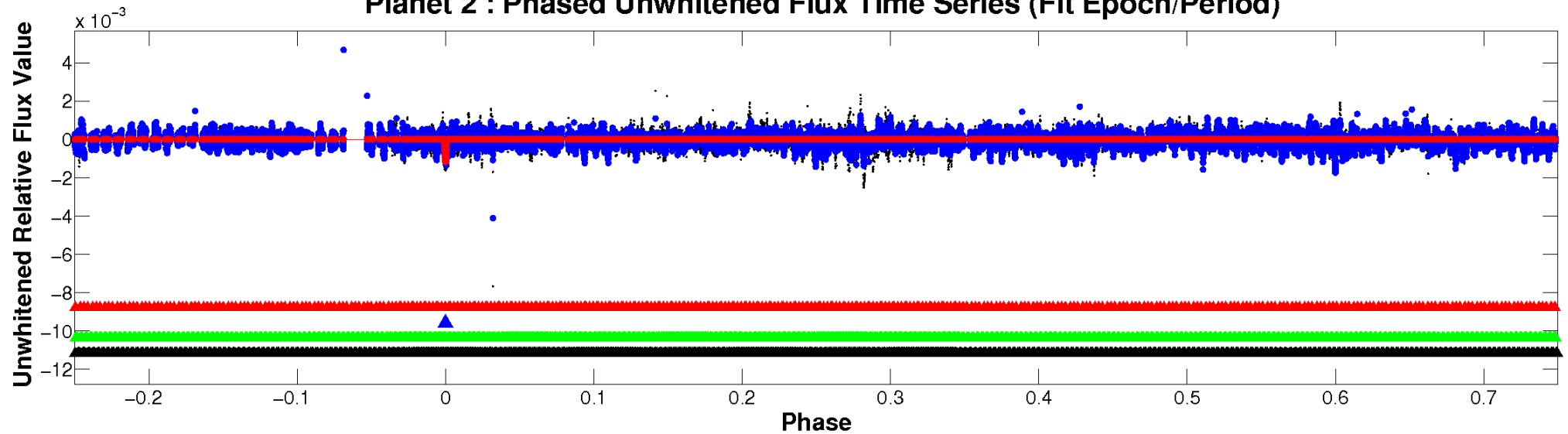
ALT Odd/Even

TCE 003661206-02

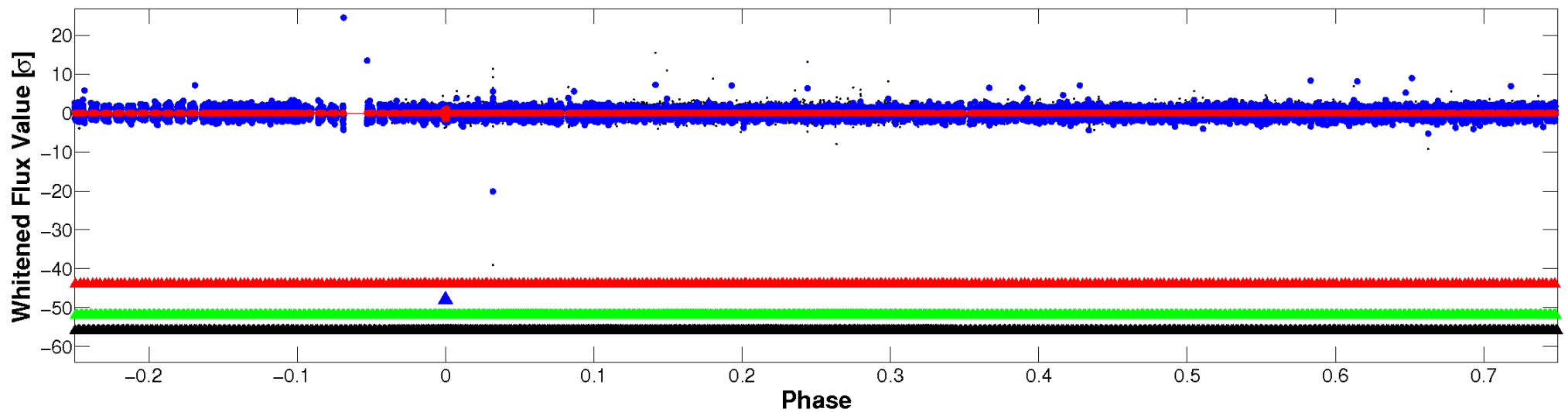


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

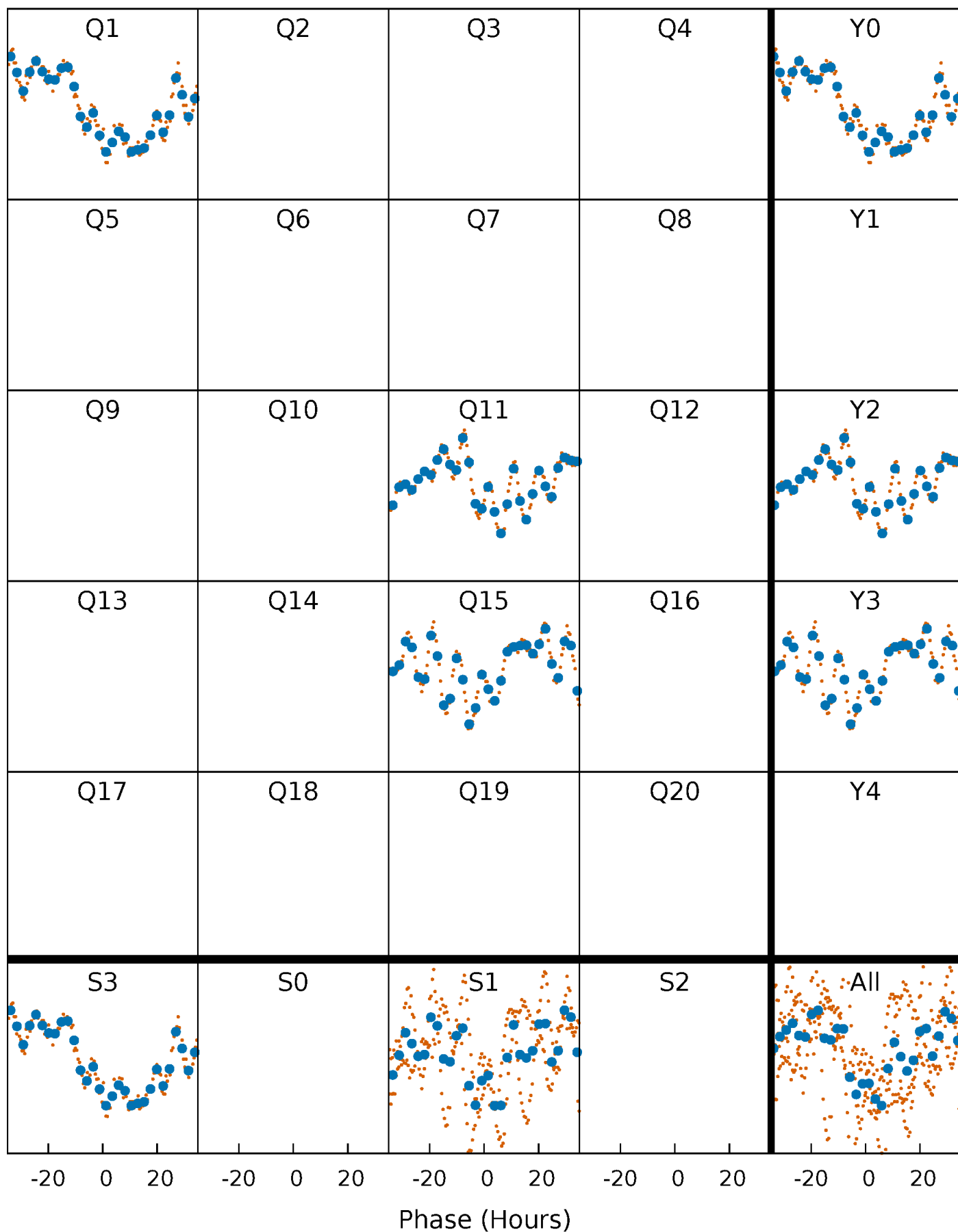


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



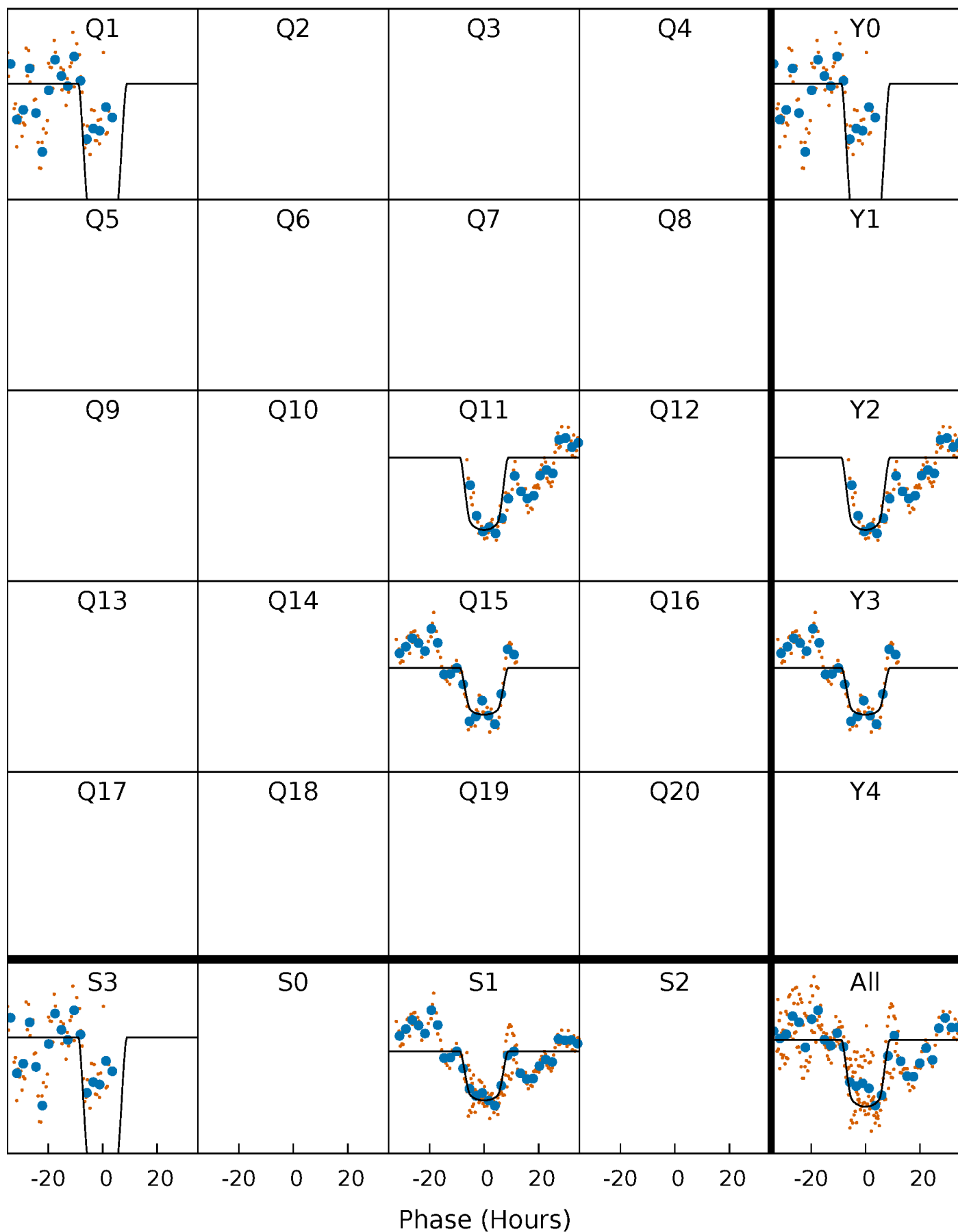
PDC Quarter-Phased Transit Curves

TCE 003661206-02 $P=431.429911$ Days $T_0=148.112115$ (BKJD)



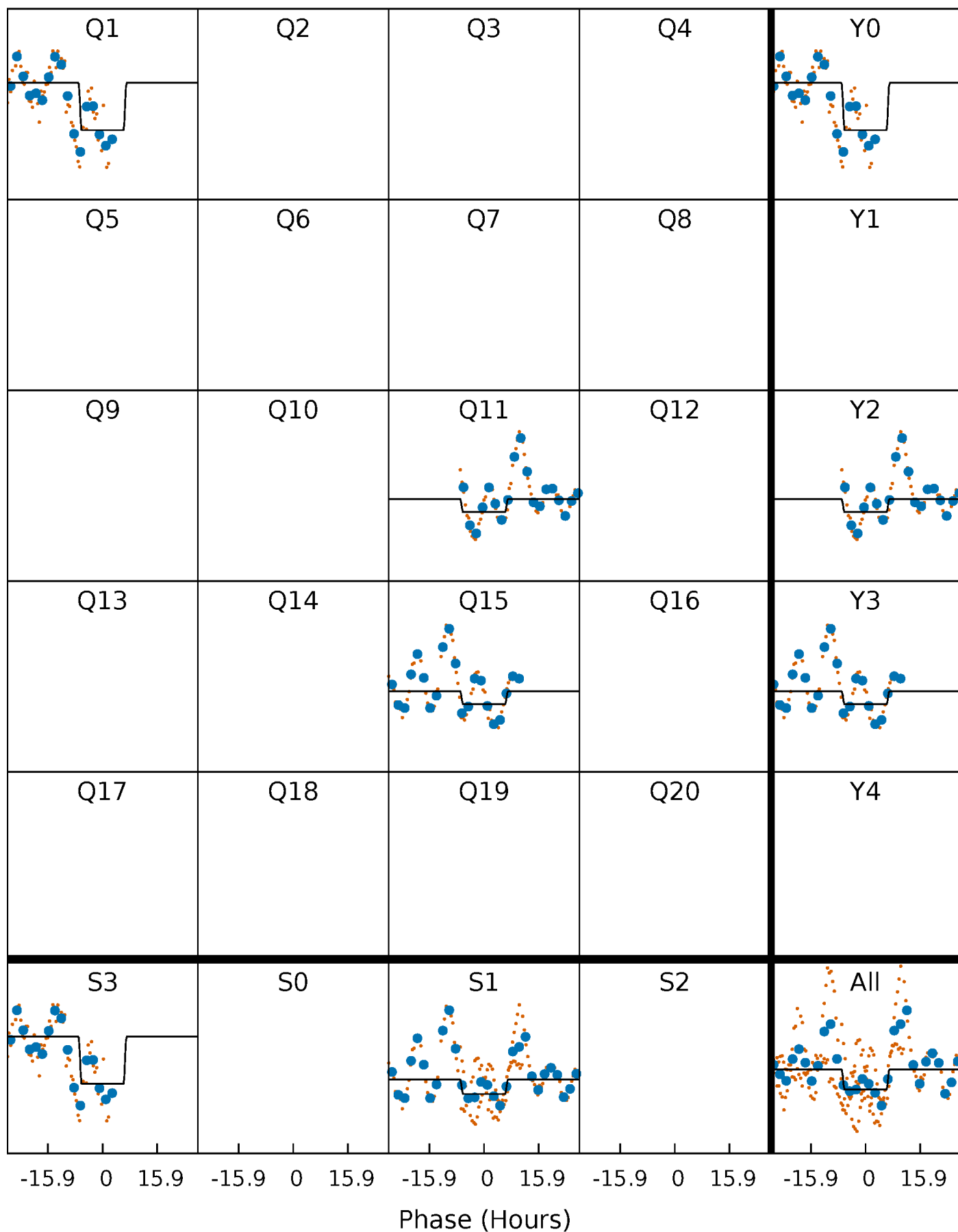
DV Quarter-Phased Transit Curves

TCE 003661206-02 $P=431.429911$ Days $T_0=148.112115$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

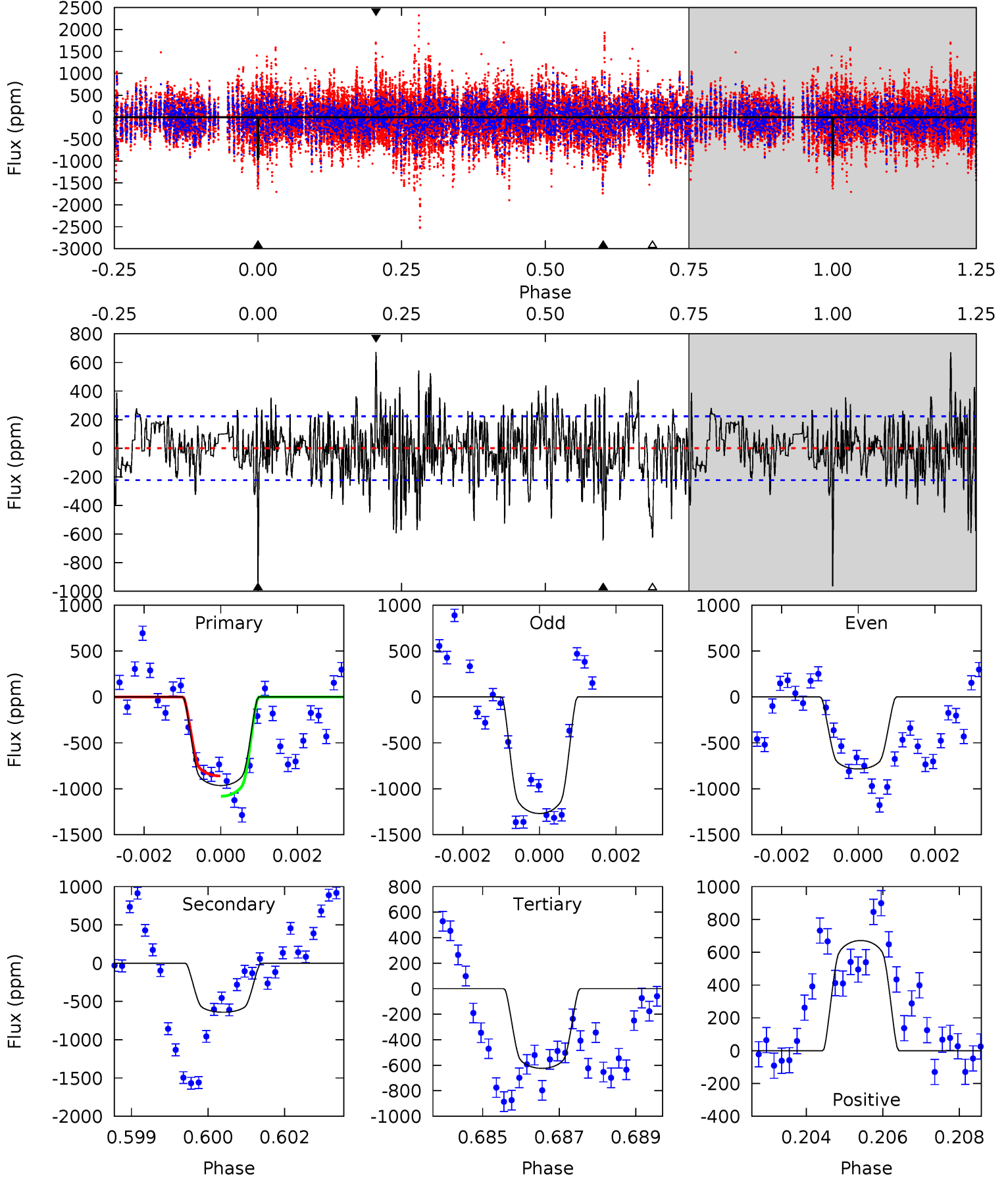
TCE 003661206-02 P=431.440997 Days $T_0=148.115961$ (BKJD)



DV Model-Shift Uniqueness Test

003661206-02, P = 431.429911 Days, E = 148.112115 Days

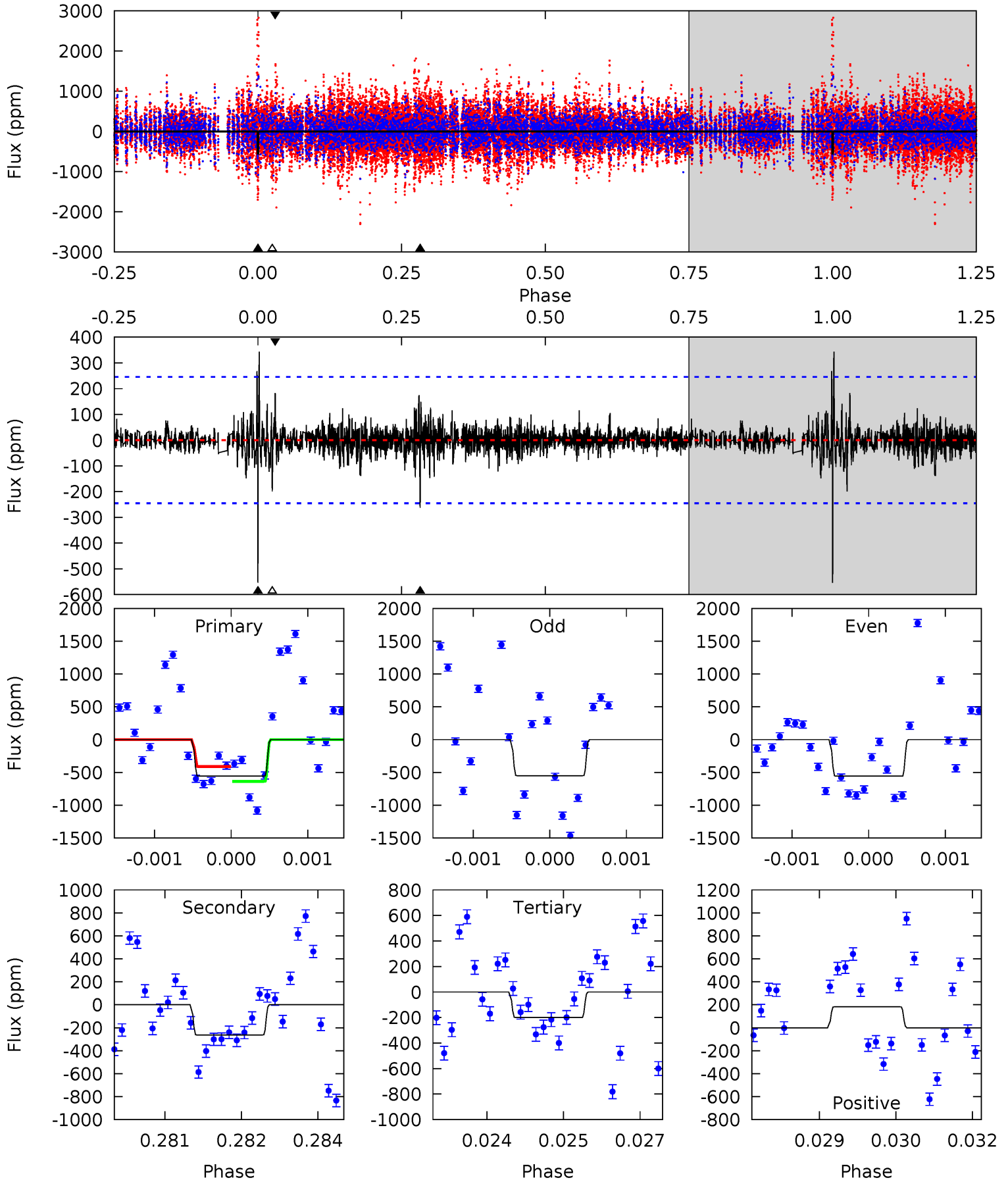
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	15.4	15.0	16.1	5.35	3.13	4.33	8.17	7.03	0.39	-0.74	5.66	0.82	0.41	2.67



Alt Model-Shift Uniqueness Test

003661206-02, P = 431.440997 Days, E = 148.115961 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	5.78	4.38	4.01	5.40	3.21	0.81	7.81	8.18	1.39	1.77	0.08	1.00	0.38	2.43



Stellar Parameters For KIC 003661206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7236^{+230}_{-316}	$4.180^{+0.105}_{-0.195}$	$-0.040^{+0.200}_{-0.350}$	$1.645^{+0.540}_{-0.291}$	$1.494^{+0.221}_{-0.221}$	$0.473^{+0.278}_{-0.234}$
	+3%/-4%	+3%/-5%	+500%/-875%	+33%/-18%	+15%/-15%	+59%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003661206-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-641 ± 42	$6.81^{+1.20}_{-0.77}$	512^{+40}_{-34}	5882^{+273}_{-262}	12205^{+3146}_{-3337}
Alt.	-263 ± 45	$4.32^{+0.77}_{-0.60}$	511^{+37}_{-31}	5914^{+443}_{-406}	12402^{+4891}_{-3758}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

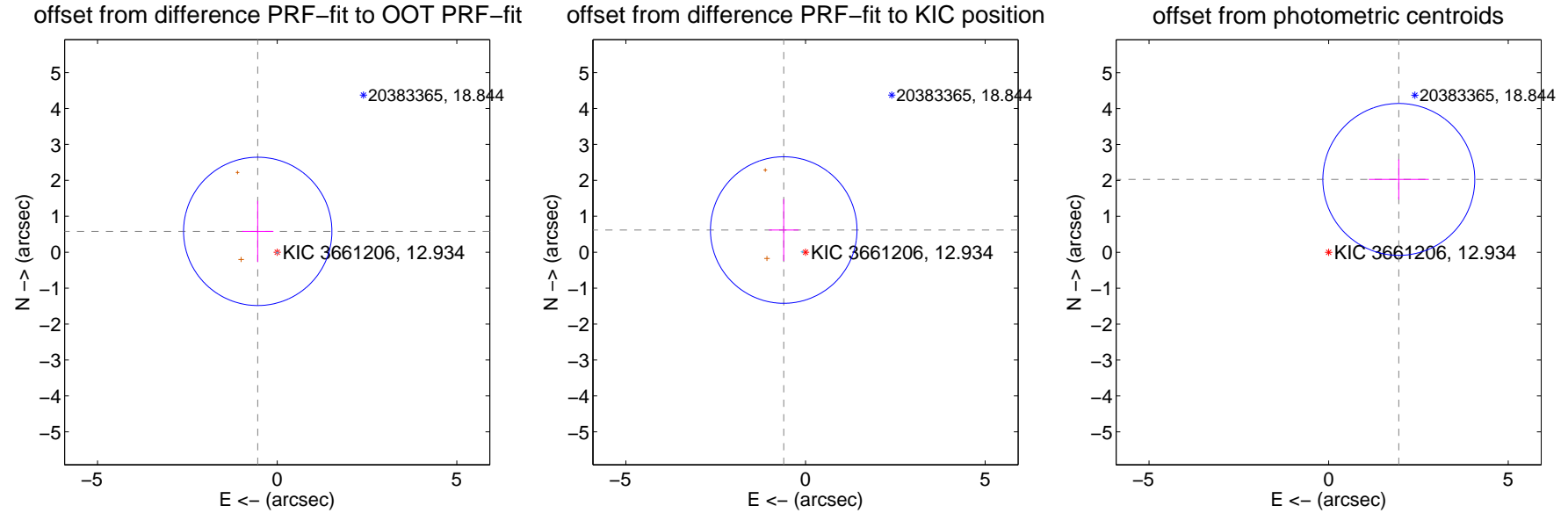
DV Centroid Data

Supplemental centroid analysis for 003661206-02. Kepler magnitude: 12.93. Transit SNR 10.84

There are 1 quarters with good PRF difference image offsets

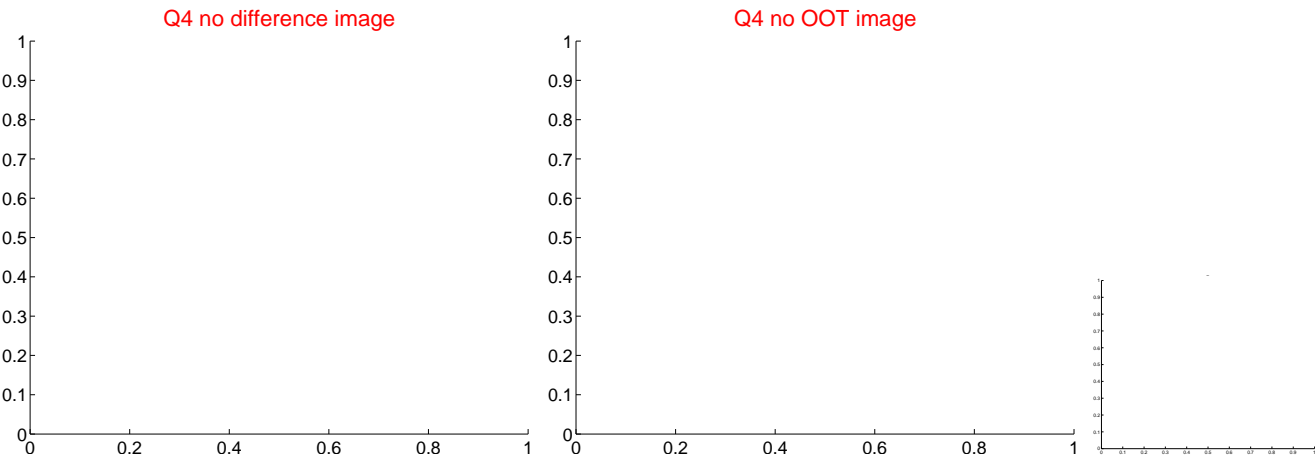
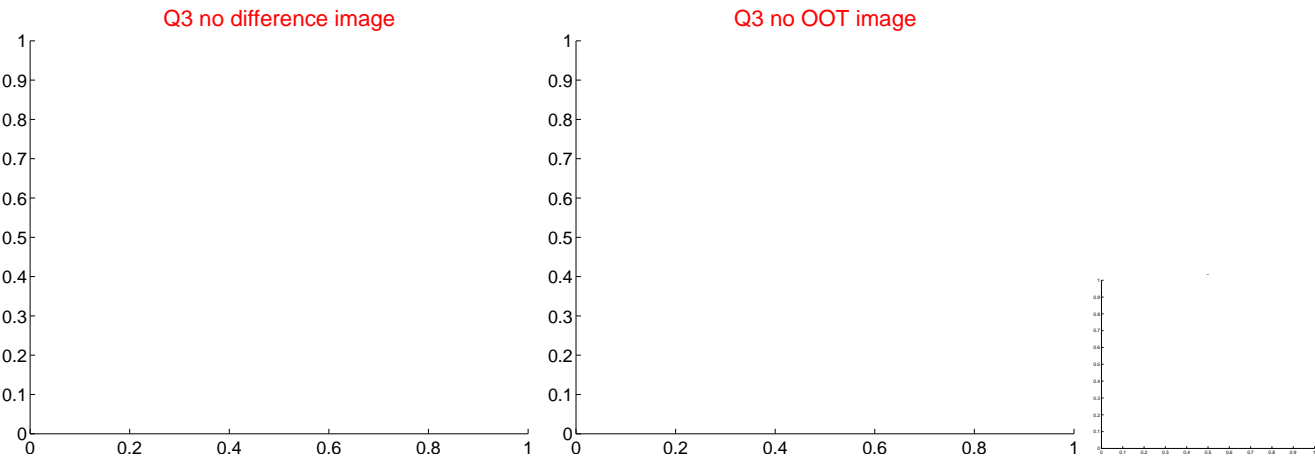
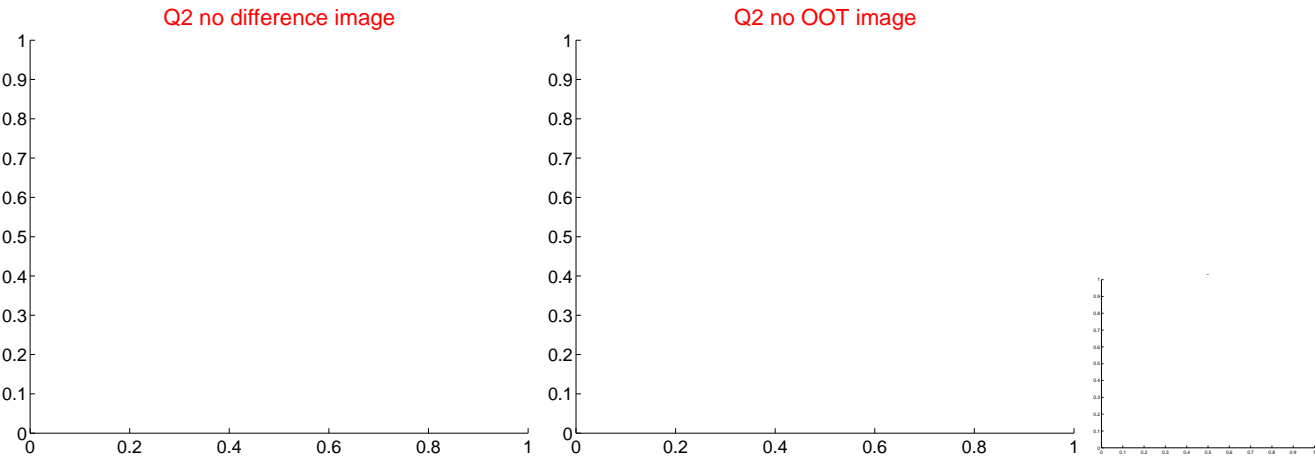
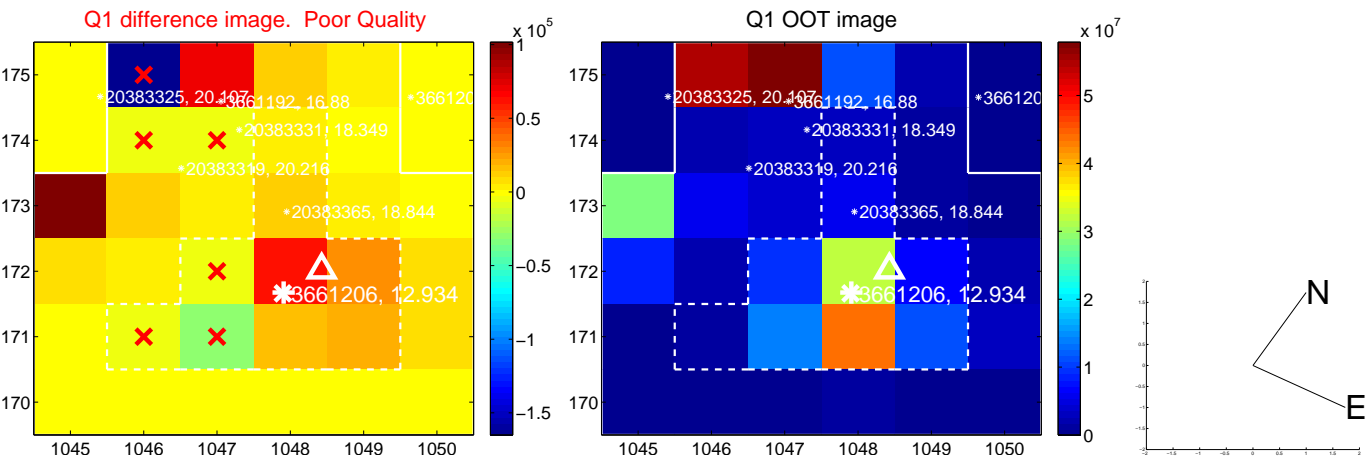
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.793 ± 0.688	1.15	0.541 ± 0.436	0.580 ± 0.849
PRF-fit source offset from KIC position	0.865 ± 0.680	1.27	0.607 ± 0.412	0.617 ± 0.863
photometric centroid source offset	2.82 ± 0.70	4.00	-1.95 ± 0.84	2.03 ± 0.56



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

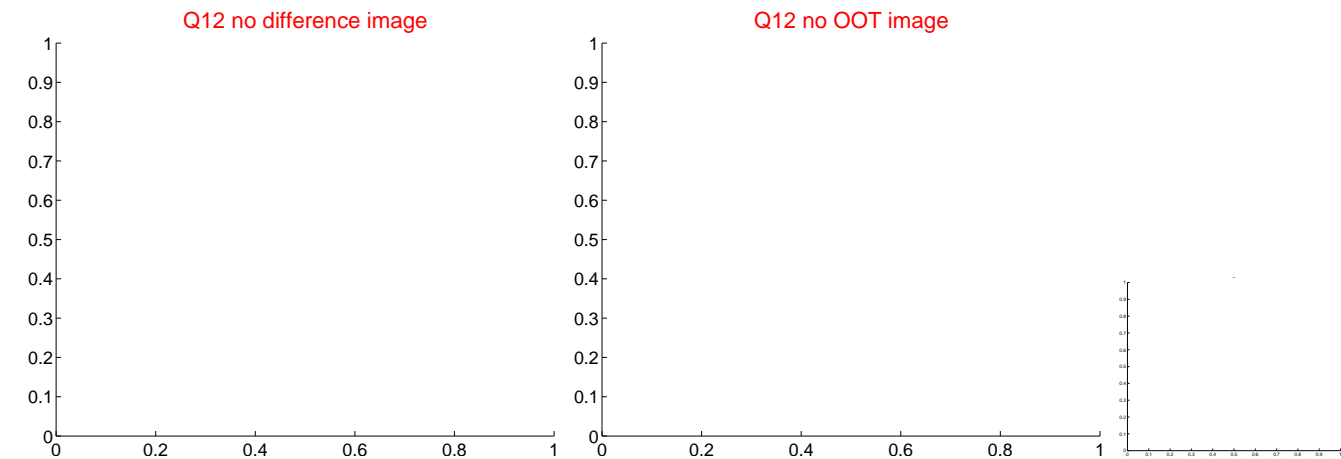
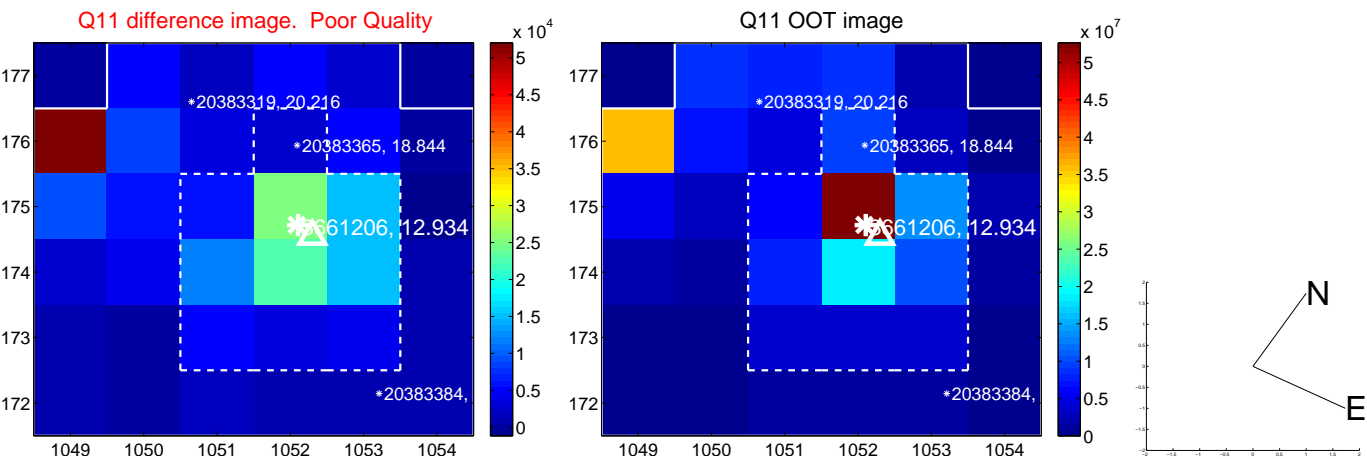
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



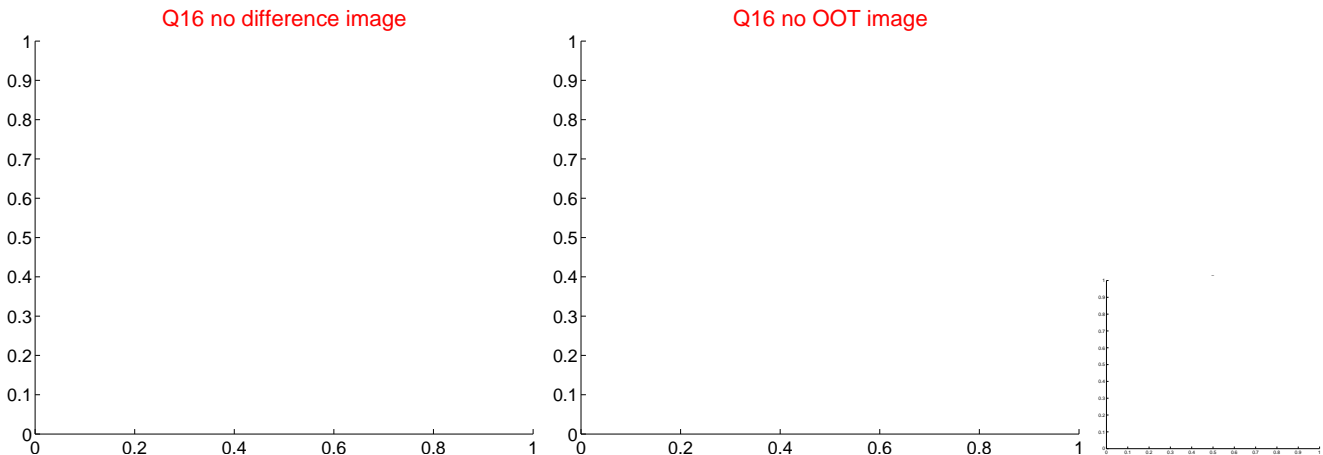
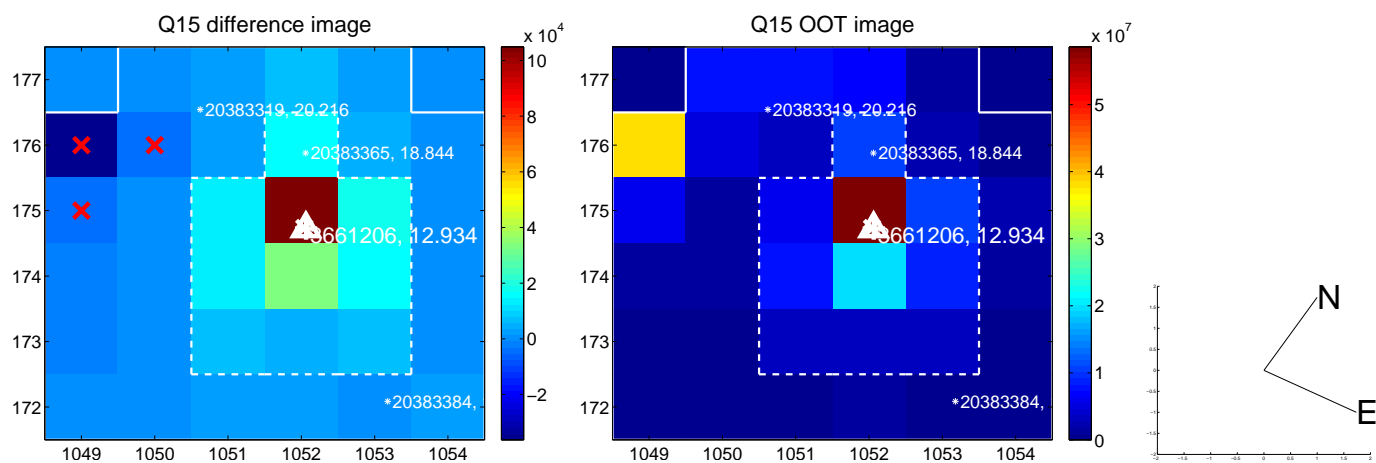
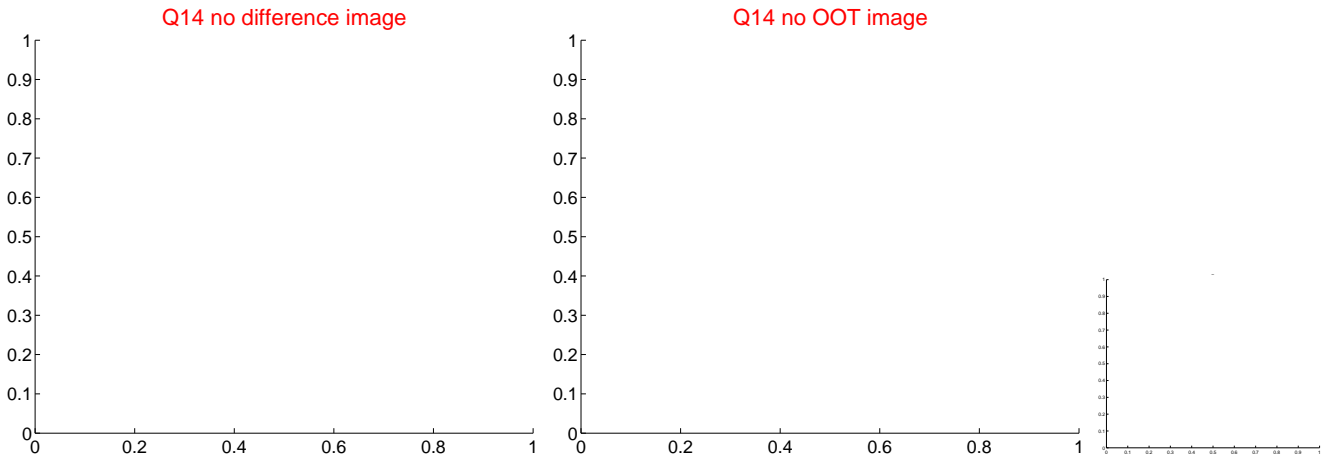
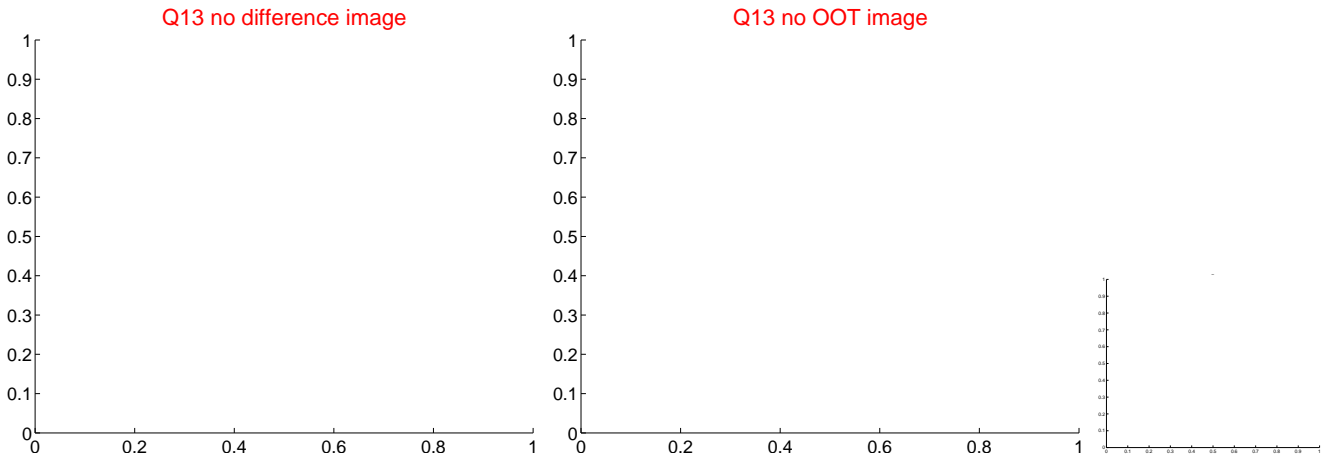
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



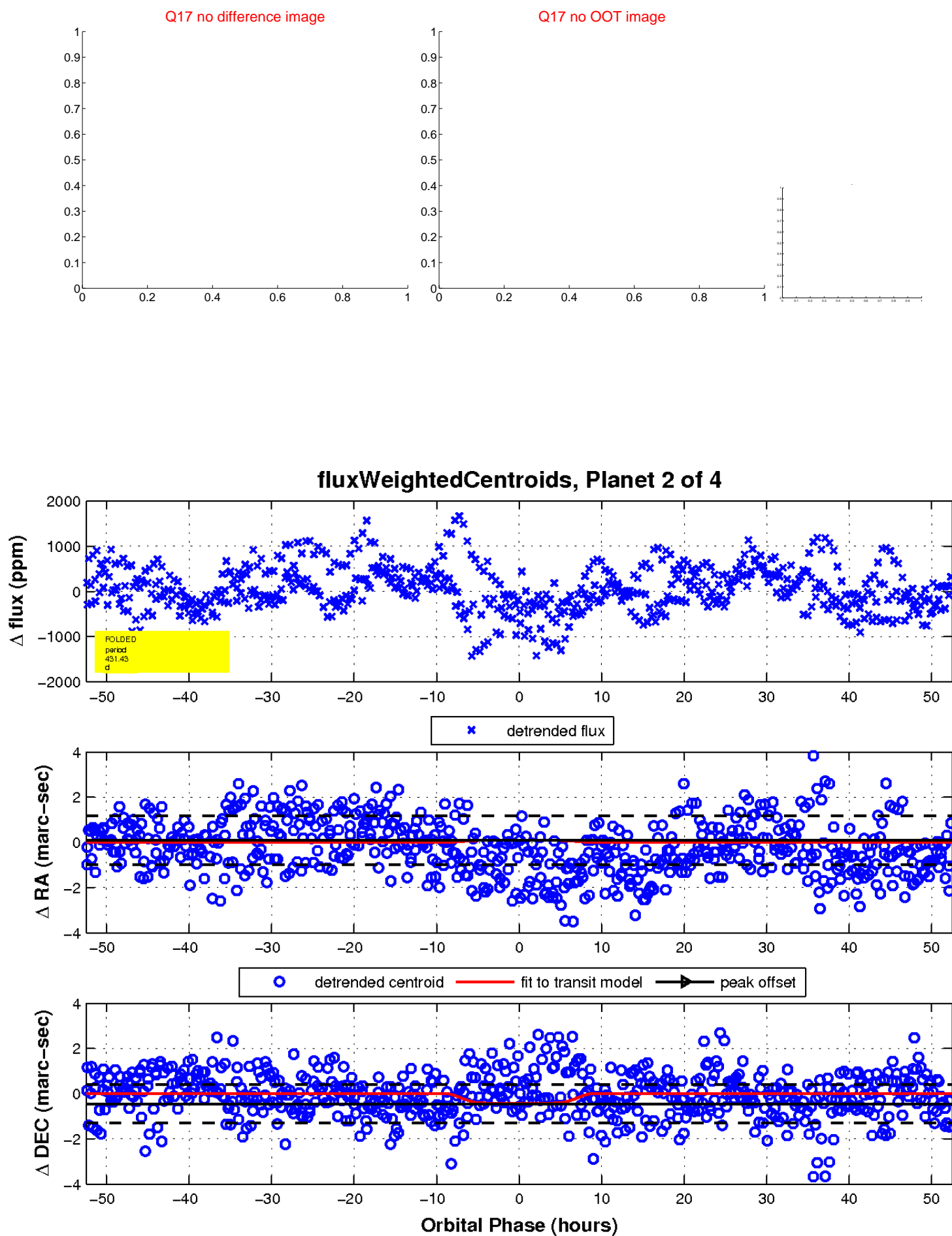
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value

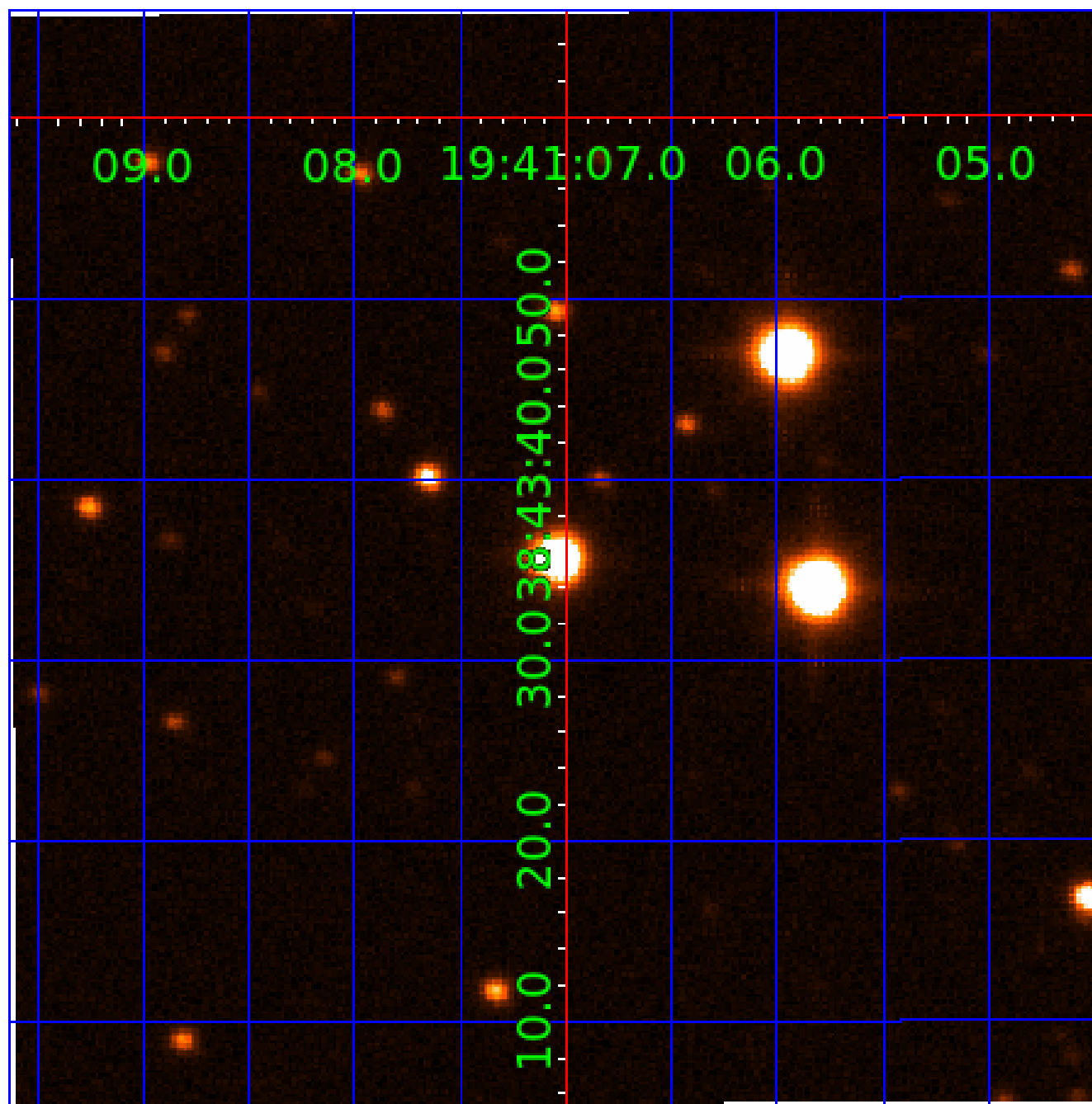


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003661206

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
003661206-01	OBS	No	3.586322	134.766720	89.1	13.766	9.0	9.8	1.65	7236	1.79	2418.06
003661206-02	OBS	No	431.429911	148.112115	1188.2	17.528	11.5	10.8	1.65	7236	6.68	4.07
003661206-03	OBS	No	1.410820	131.915654	114.5	6.184	11.3	12.4	1.65	7236	2.92	8388.87
003661206-04	OBS	No	1.410858	132.604741	124.2	6.538	13.5	16.5	1.65	7236	2.89	8388.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003661206-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003661206-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
003661206-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003661206-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

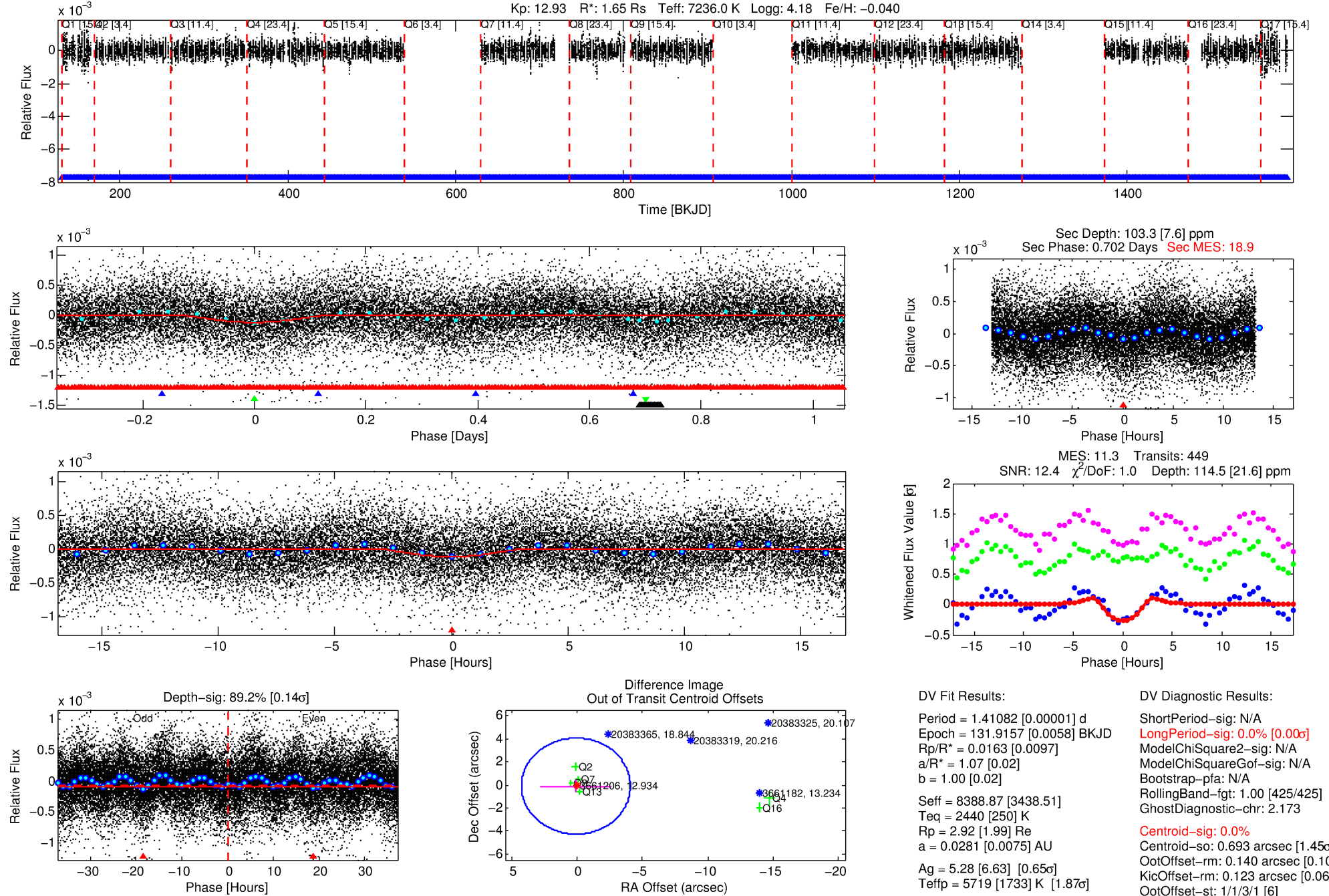
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003661206-03

No Significant Match Found

DV One-Page Summary

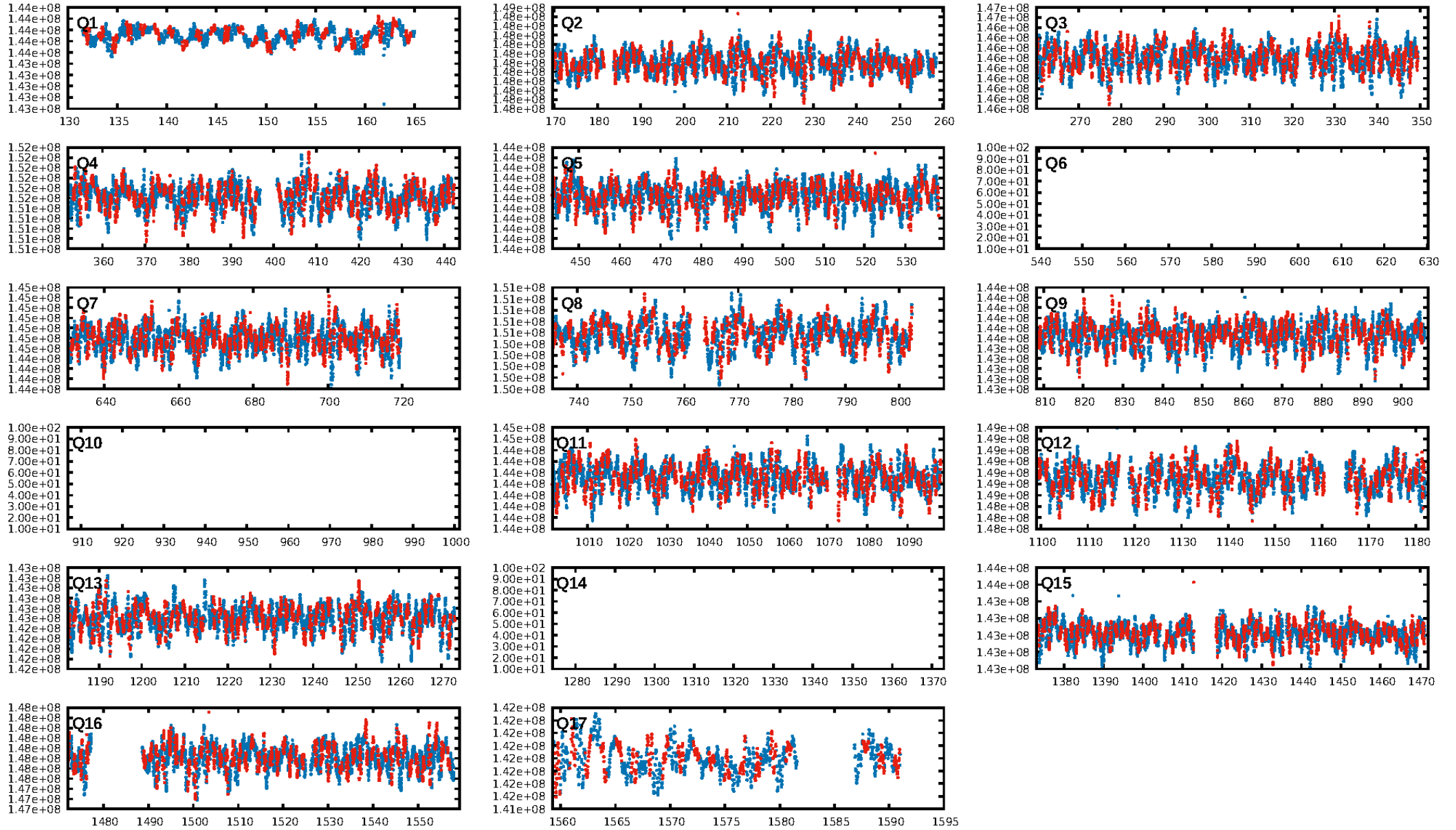
KIC: 3661206 Candidate: 3 of 4 Period: 1.411 d



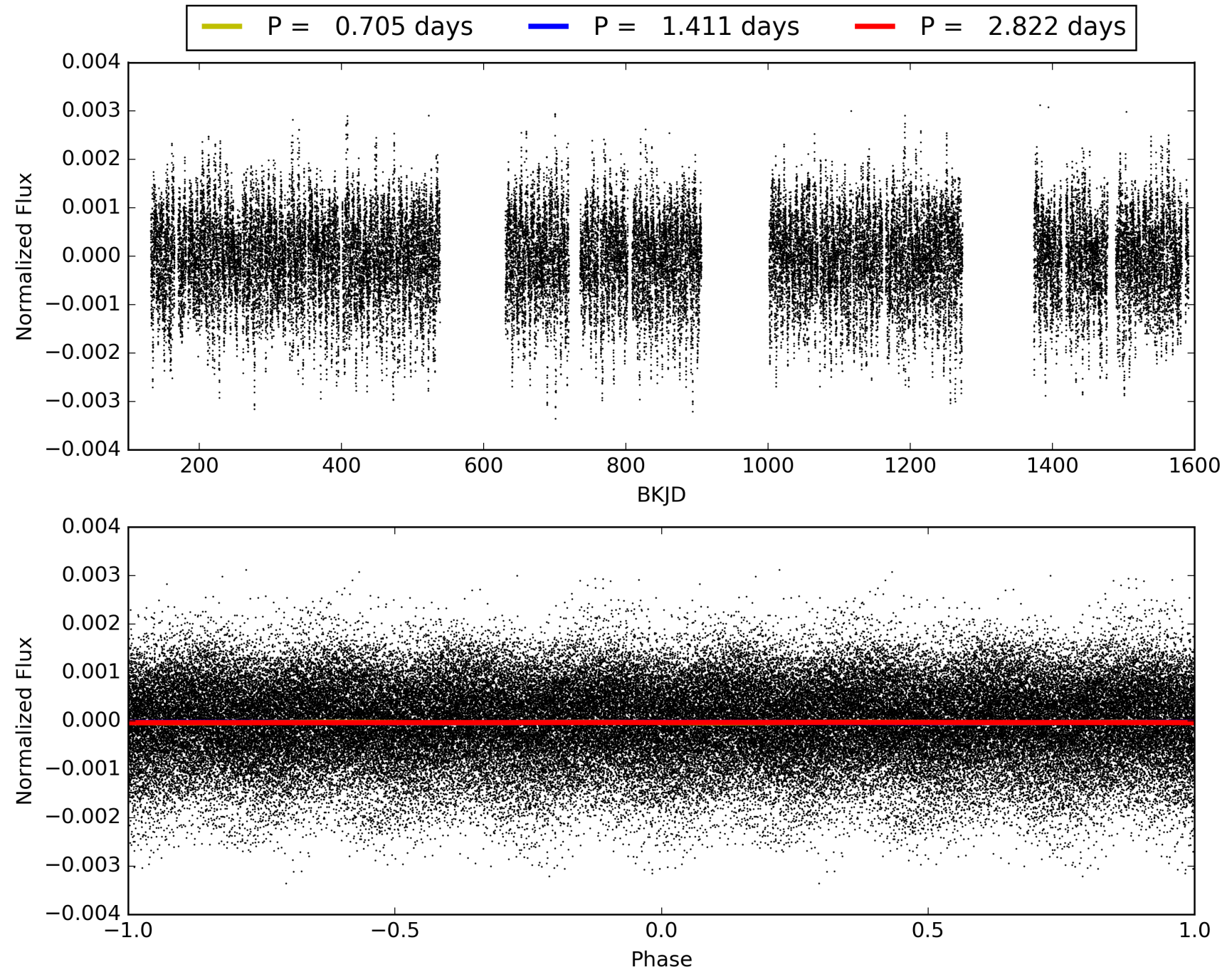
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:14:08 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003661206-03, PDC Light Curves

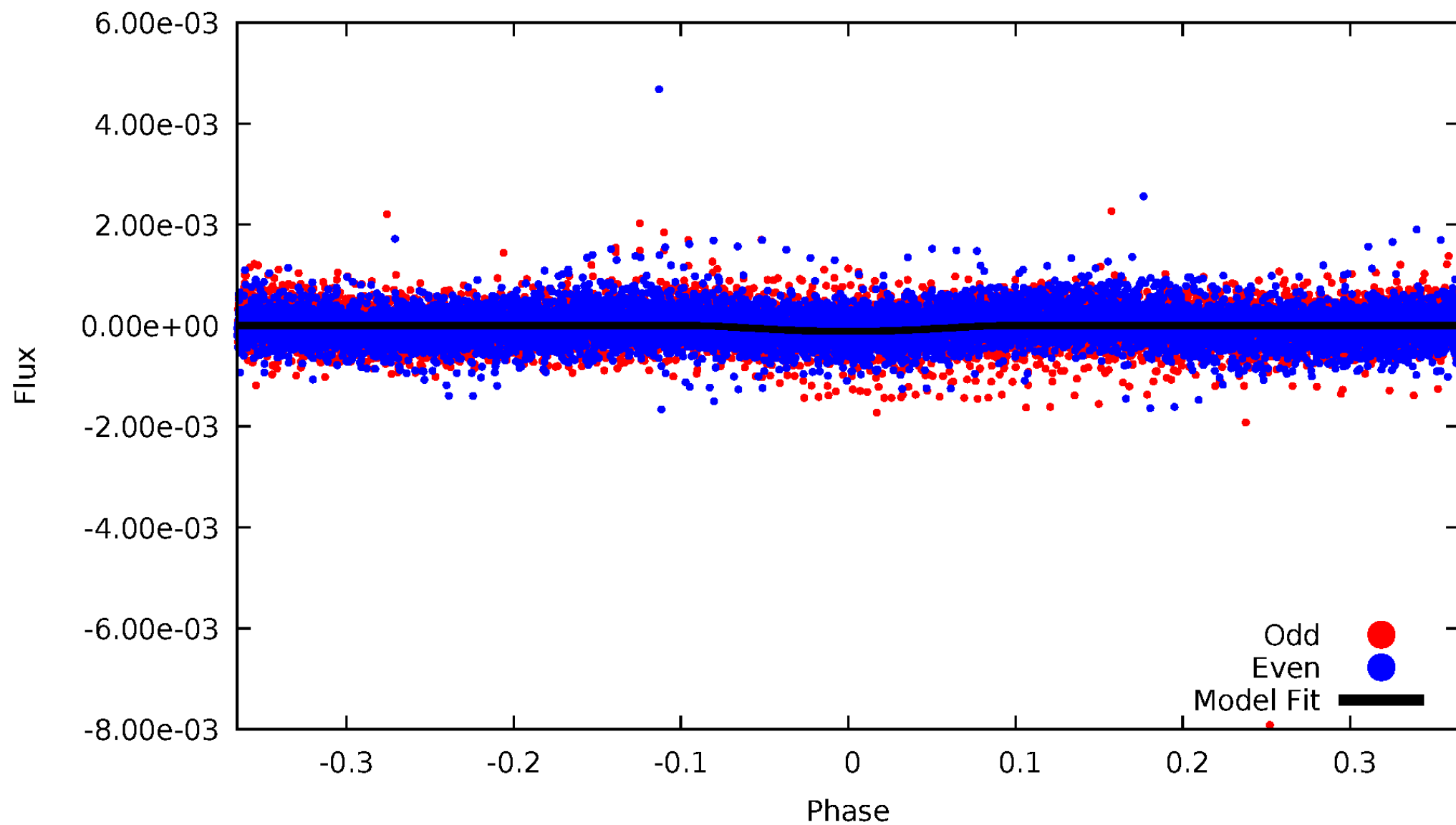


TCE 003661206-03



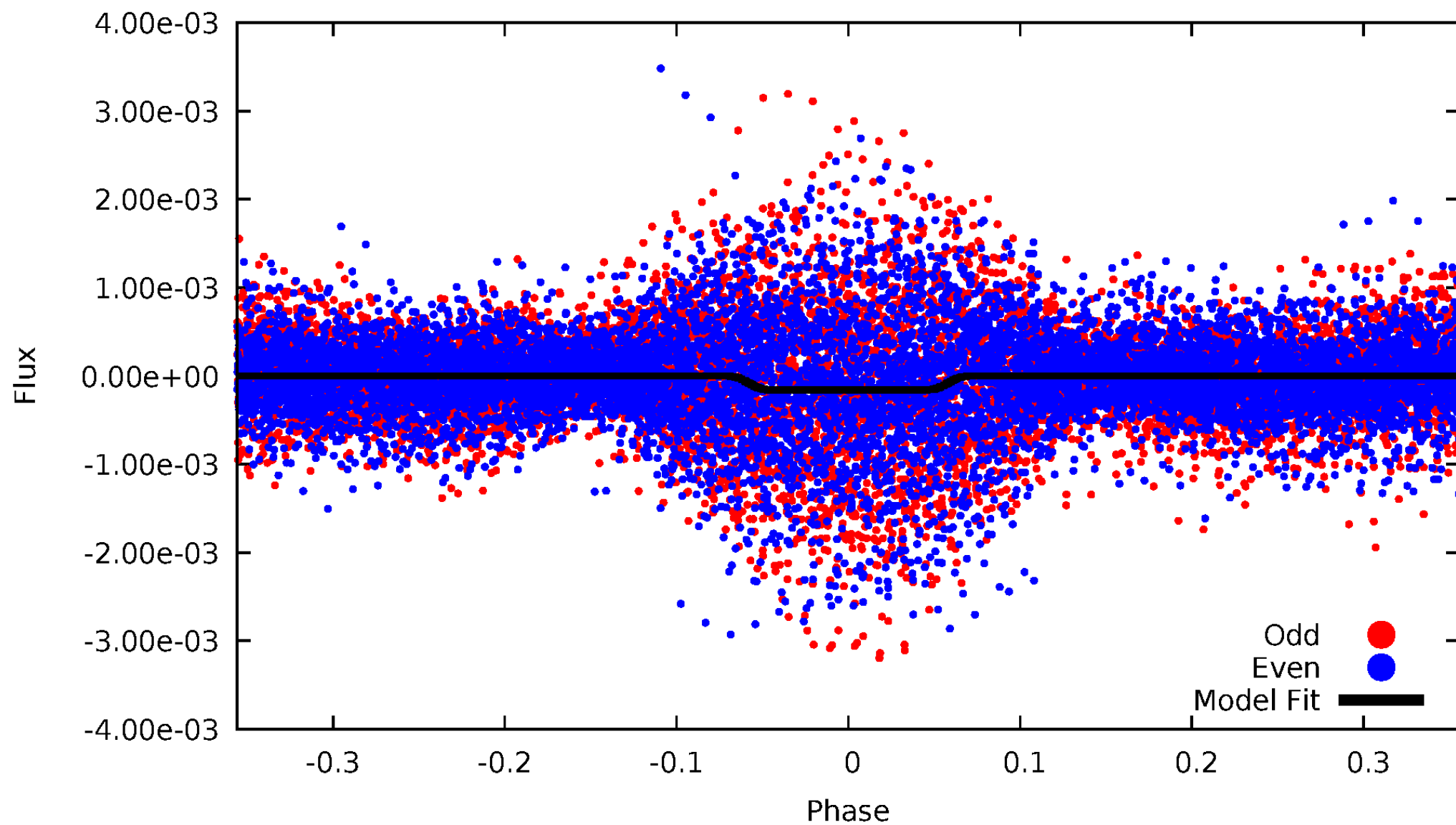
DV Odd/Even

TCE 003661206-03



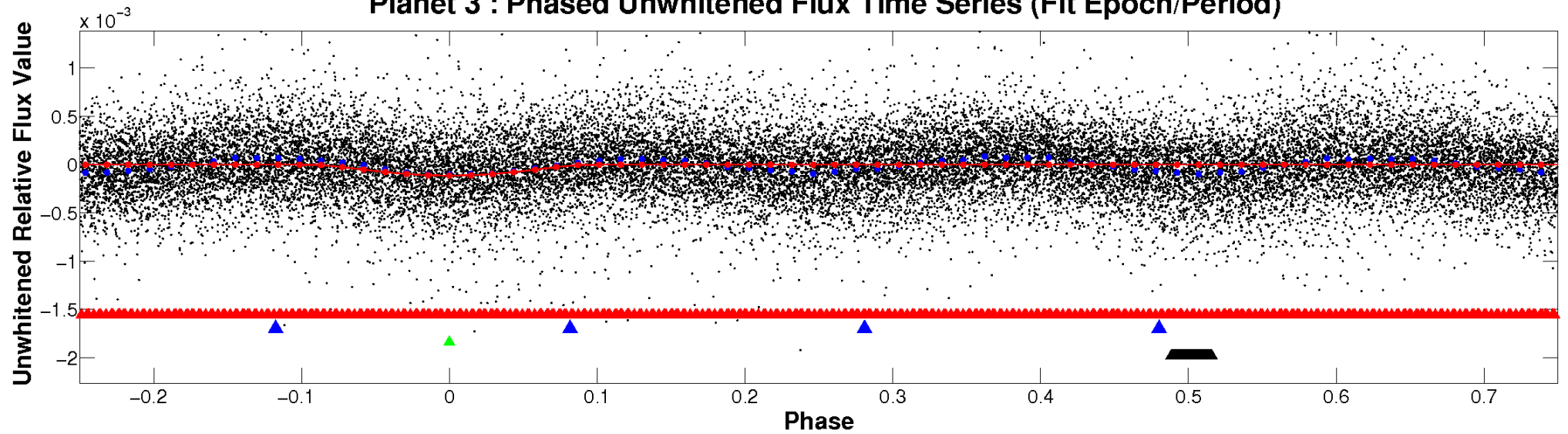
ALT Odd/Even

TCE 003661206-03

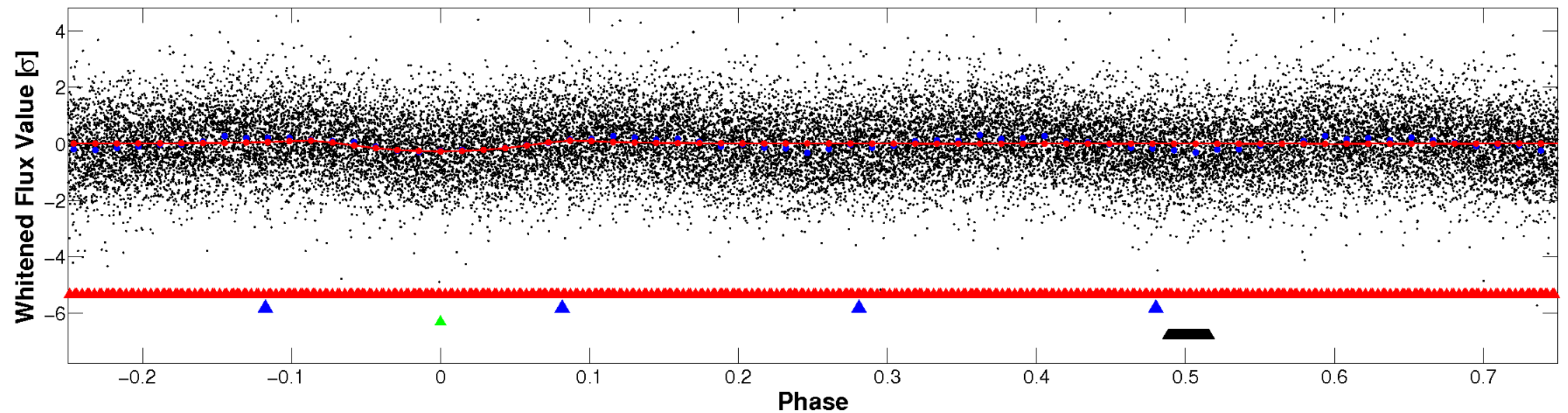


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

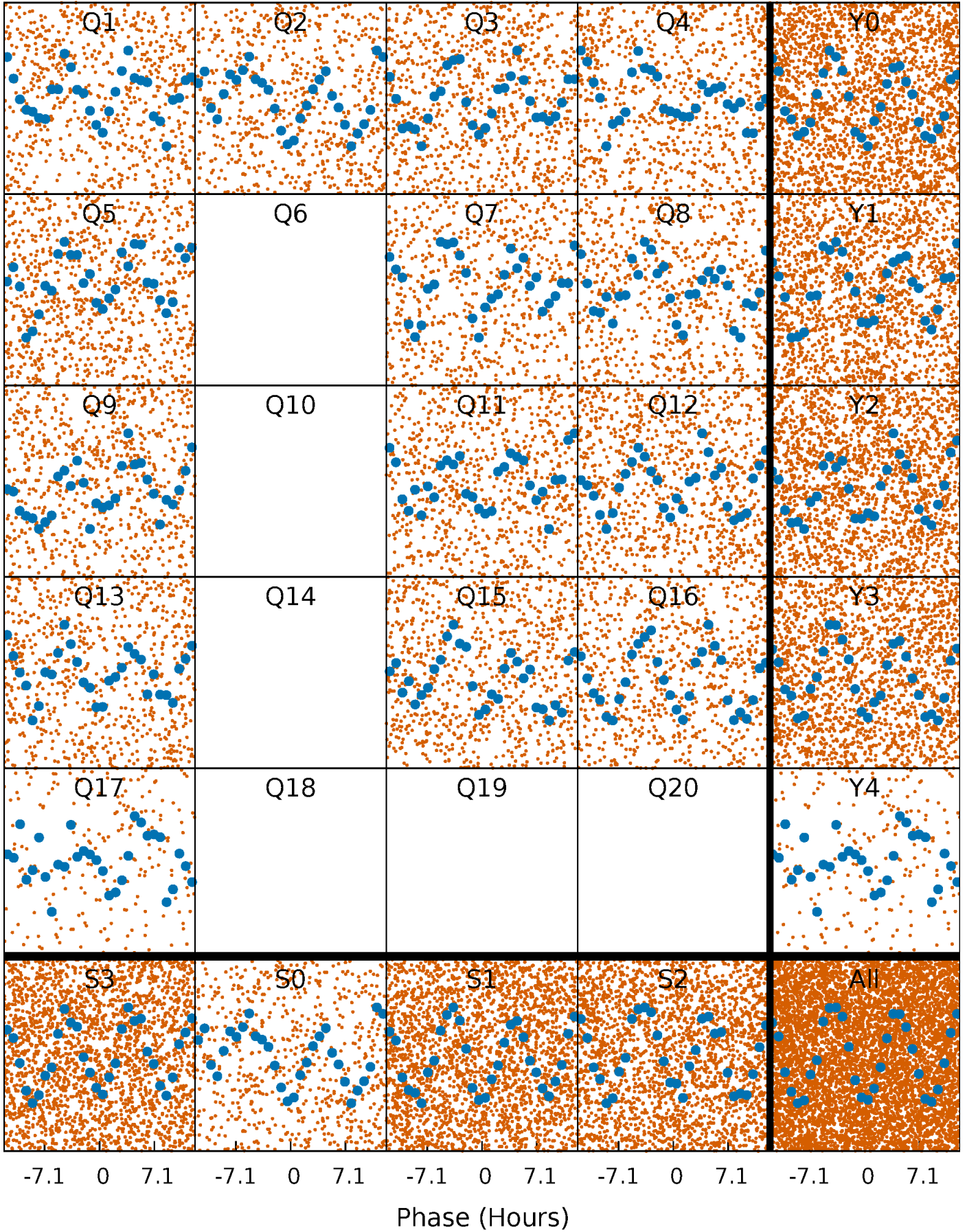


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



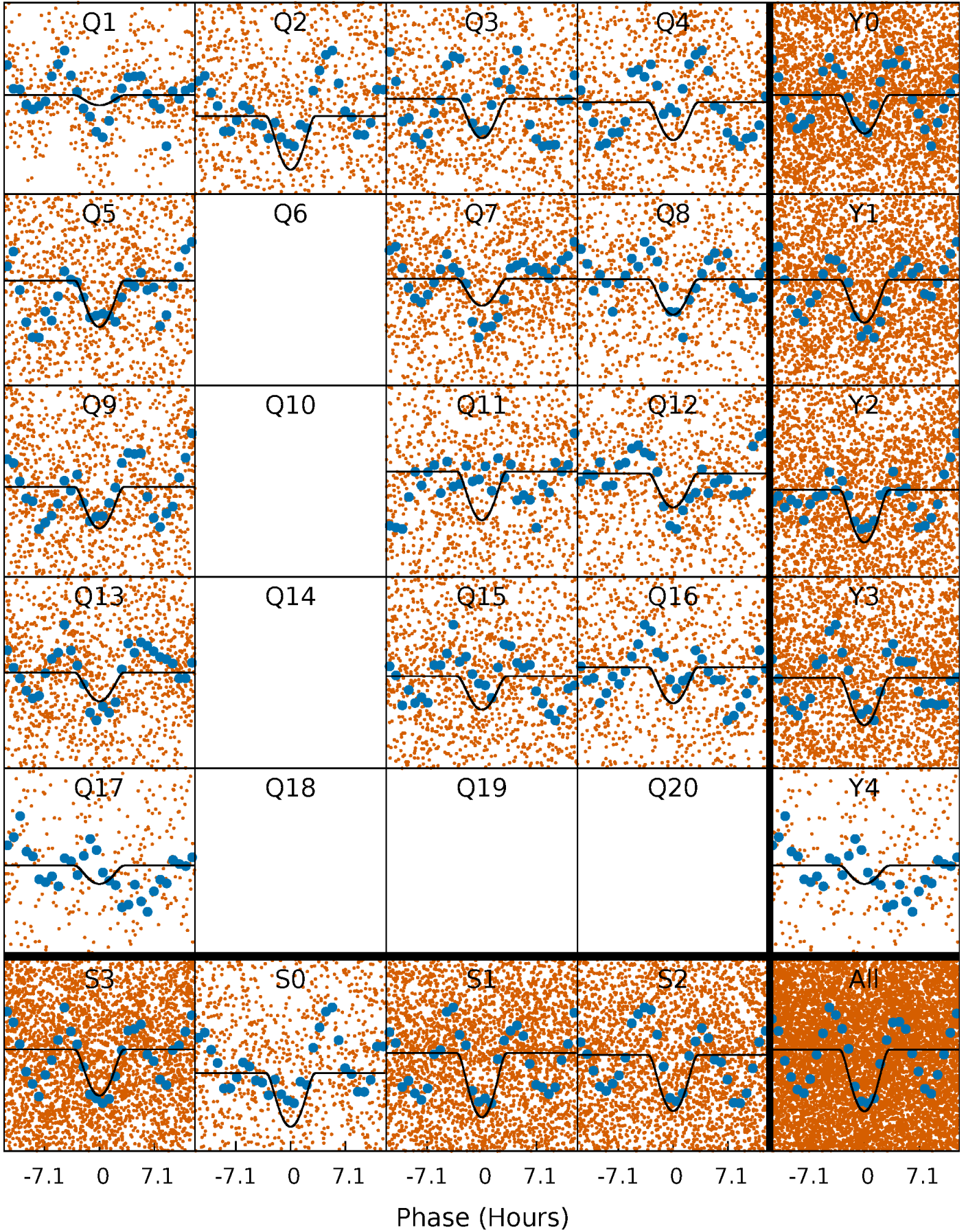
PDC Quarter-Phased Transit Curves

TCE 003661206-03 P= 1.410820 Days $T_0=131.915654$ (BKJD)



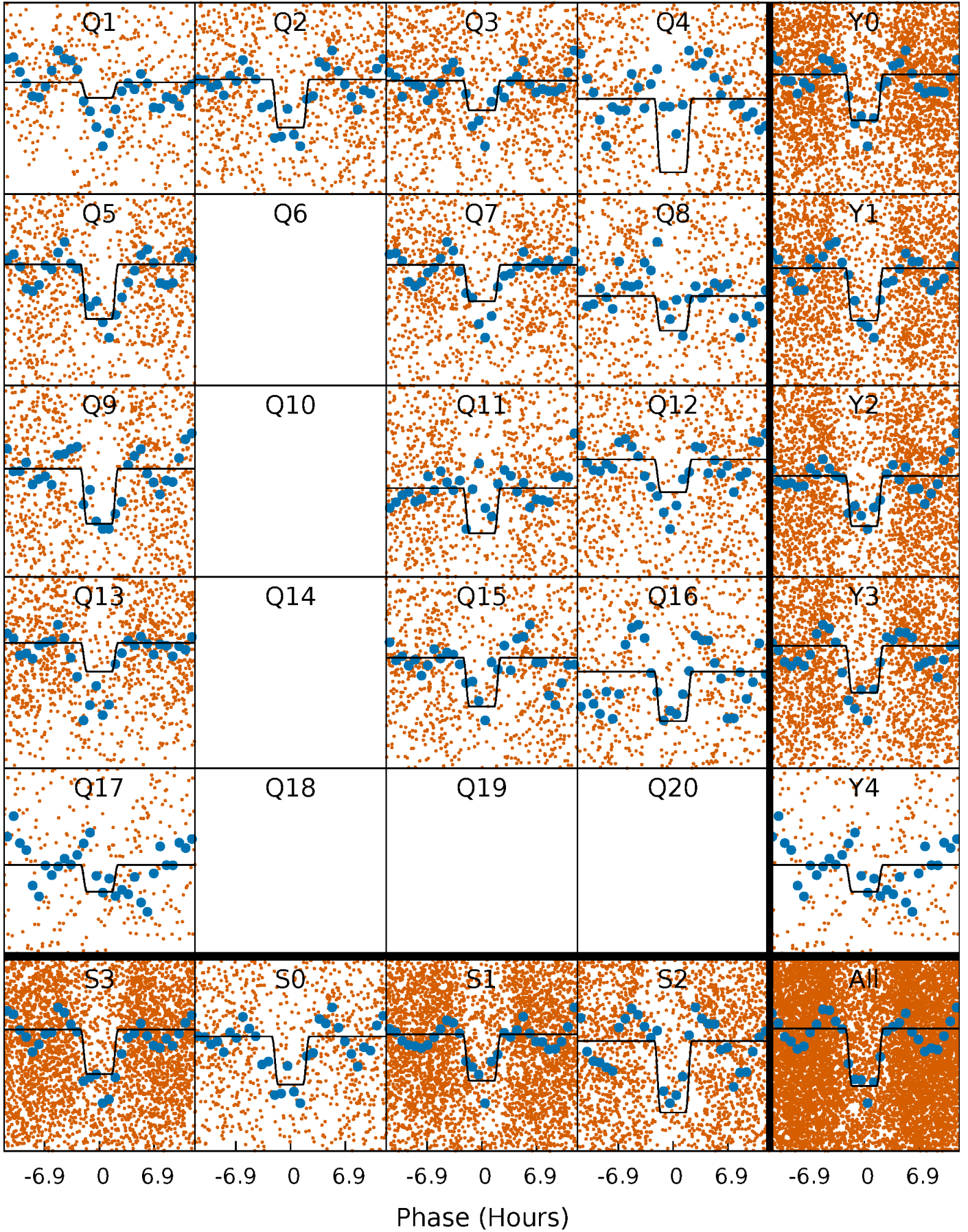
DV Quarter-Phased Transit Curves

TCE 003661206-03 P= 1.410820 Days $T_0=131.915654$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

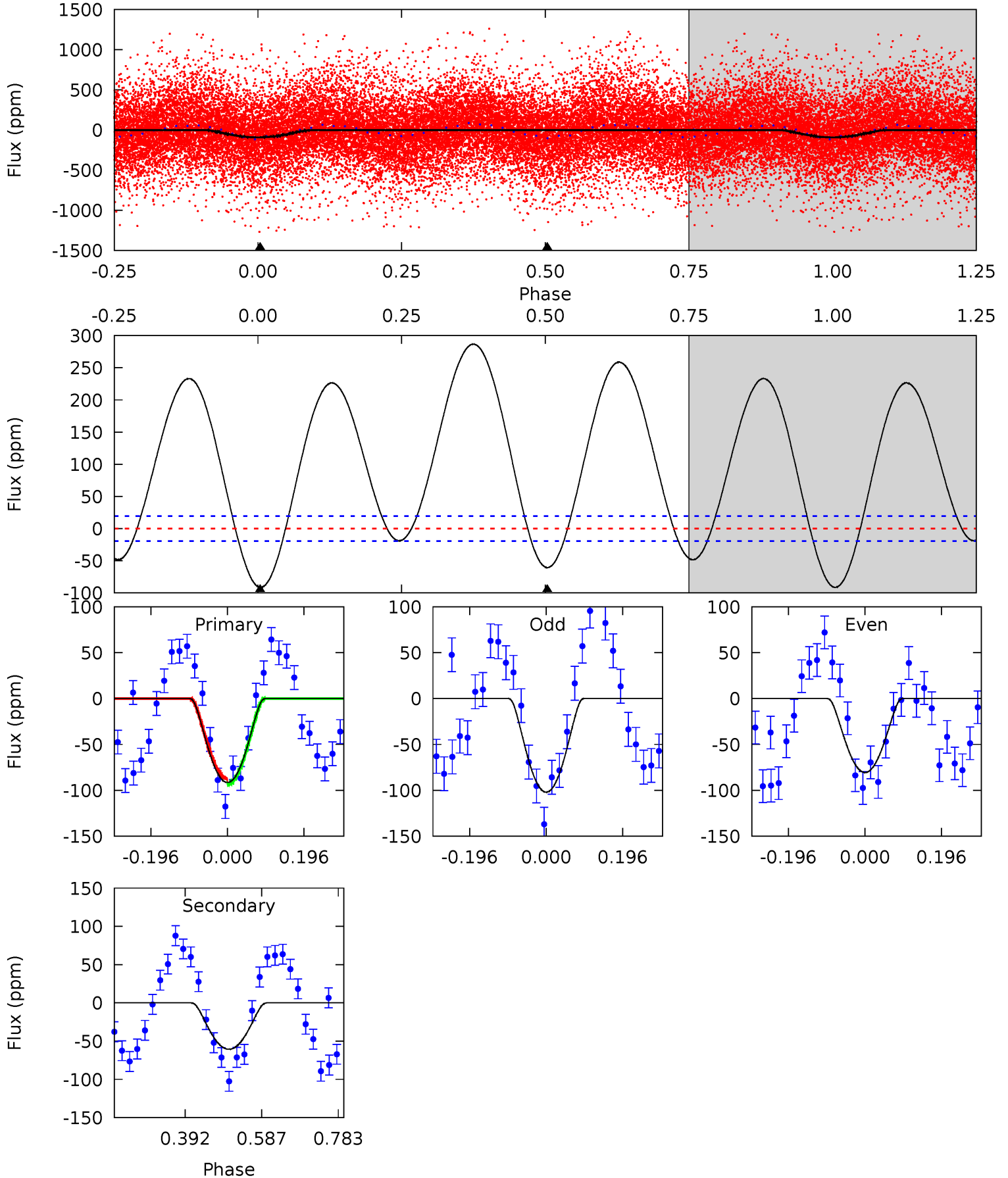
TCE 003661206-03 P= 1.410869 Days $T_0=131.898727$ (BKJD)



DV Model-Shift Uniqueness Test

003661206-03, P = 1.410820 Days, E = 131.915654 Days

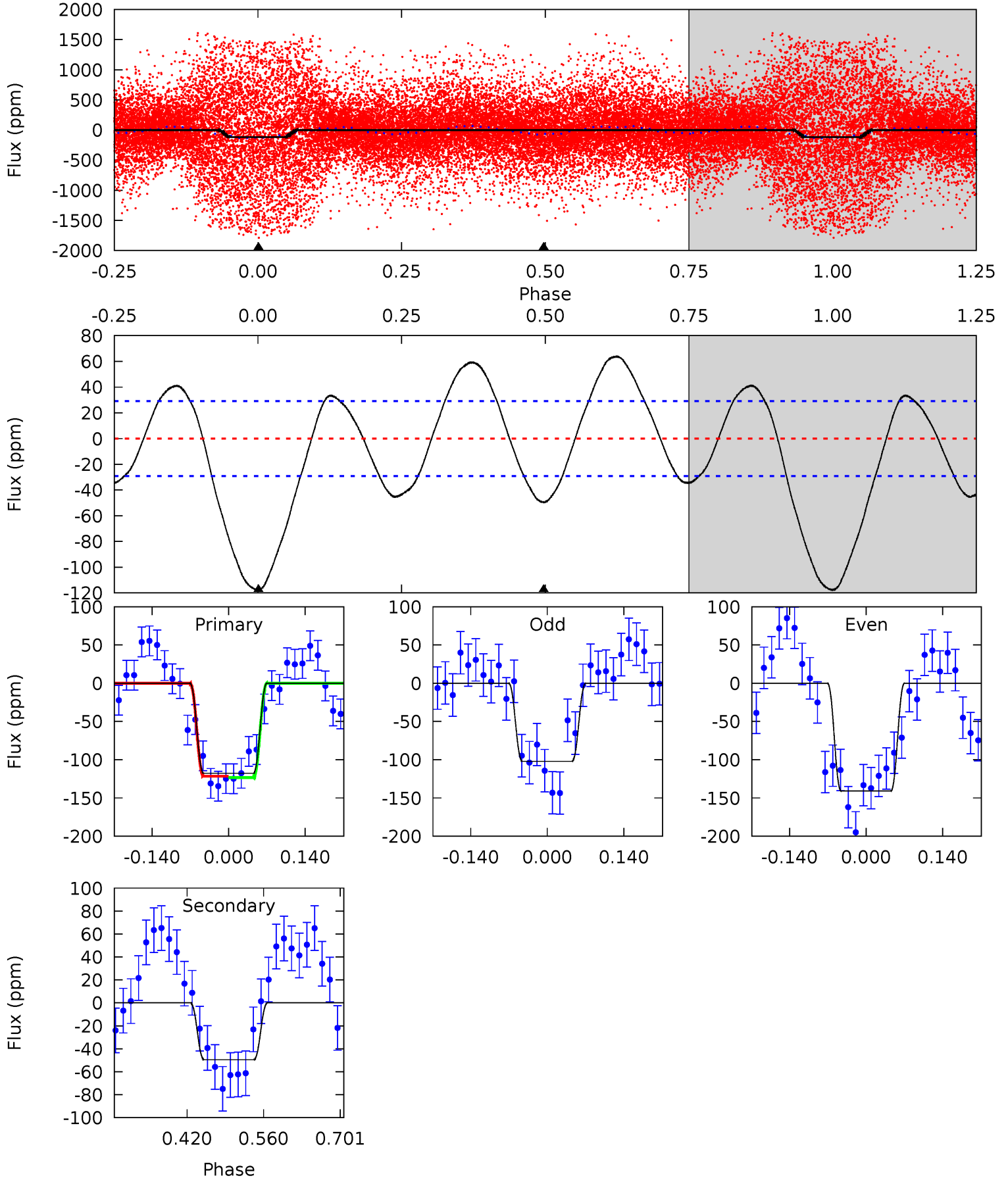
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	13.8	0	0	4.42	1.29	8.97	20.8	20.8	13.8	13.8	2.46	0.84	0.76	0.67



Alt Model-Shift Uniqueness Test

003661206-03, P = 1.410869 Days, E = 131.898727 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	7.65	0	0	4.49	1.48	4.72	18.2	18.2	7.65	7.65	2.94	1.11	0.35	0.13



Stellar Parameters For KIC 003661206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7236^{+230}_{-316}	$4.180^{+0.105}_{-0.195}$	$-0.040^{+0.200}_{-0.350}$	$1.645^{+0.540}_{-0.291}$	$1.494^{+0.221}_{-0.221}$	$0.473^{+0.278}_{-0.234}$
	+3%/-4%	+3%/-5%	+500%/-875%	+33%/-18%	+15%/-15%	+59%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003661206-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-61±4	$3.16^{+1.76}_{-1.73}$	3424^{+249}_{-216}	4764^{+2320}_{-830}	$2.541^{+9.414}_{-1.433}$
Alt.	-50±6	$2.56^{+1.54}_{-1.56}$	3451^{+294}_{-212}	5110^{+3242}_{-1104}	$3.312^{+16.891}_{-2.054}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

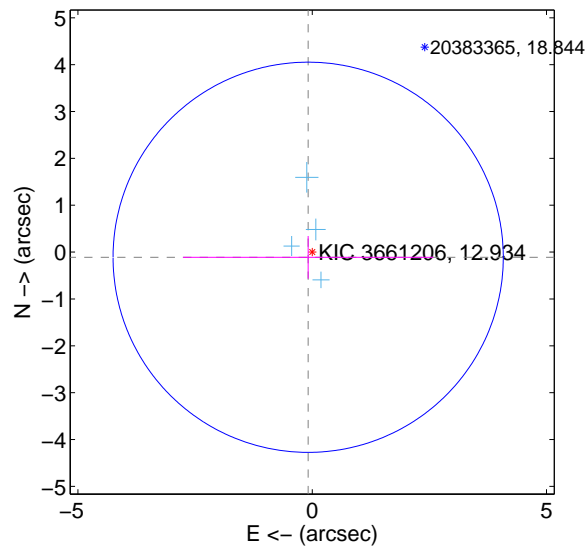
Supplemental centroid analysis for 003661206-03. Kepler magnitude: 12.93. Transit SNR 12.44

There are 5 quarters with good PRF difference image offsets

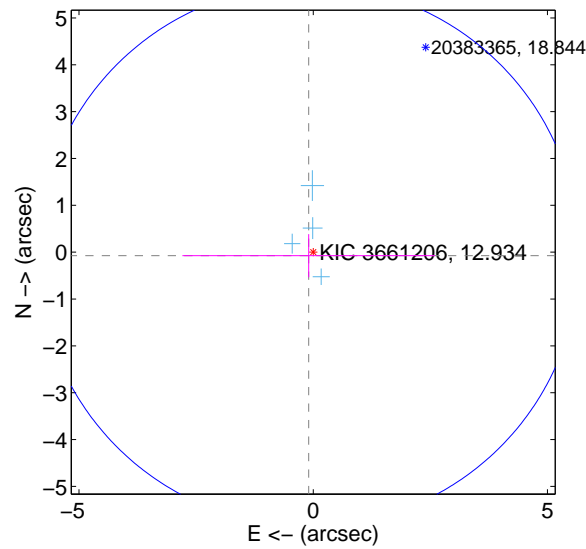
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.140 ± 1.388	0.10	0.086 ± 2.674	-0.110 ± 0.455
PRF-fit source offset from KIC position	0.123 ± 1.927	0.06	0.098 ± 2.696	-0.075 ± 0.460
photometric centroid source offset	0.69 ± 0.48	1.45	-0.19 ± 0.58	0.67 ± 0.47

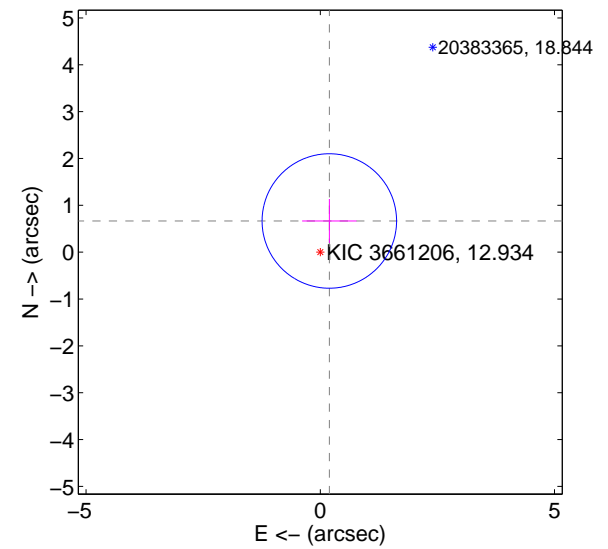
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

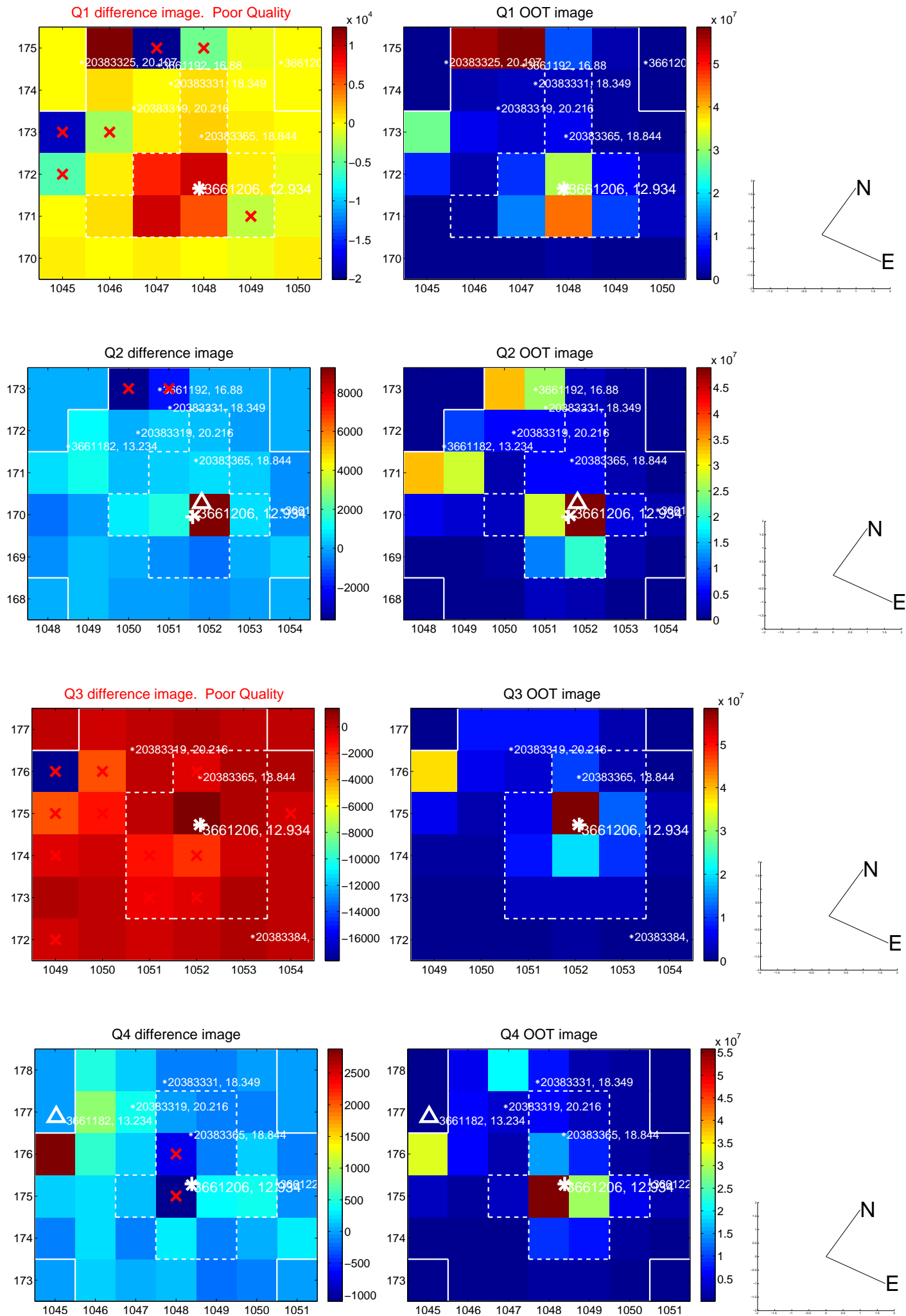


offset from photometric centroids

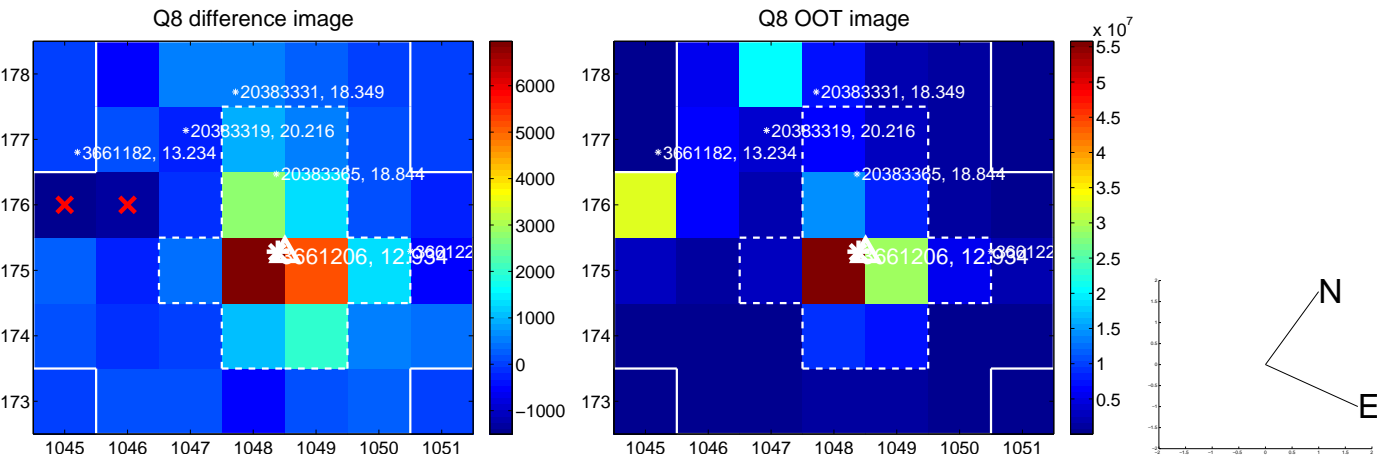
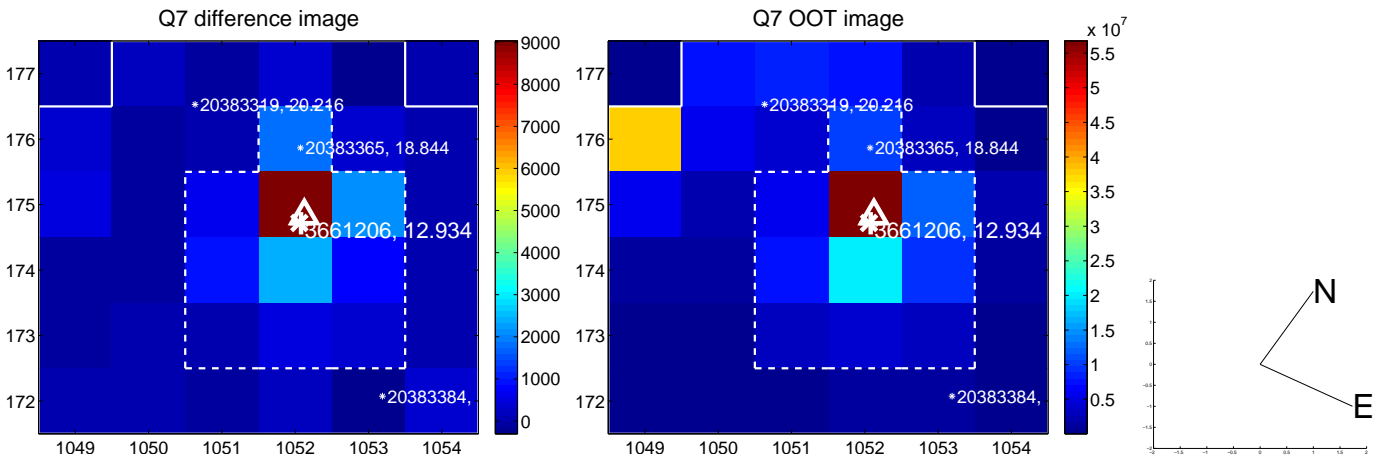
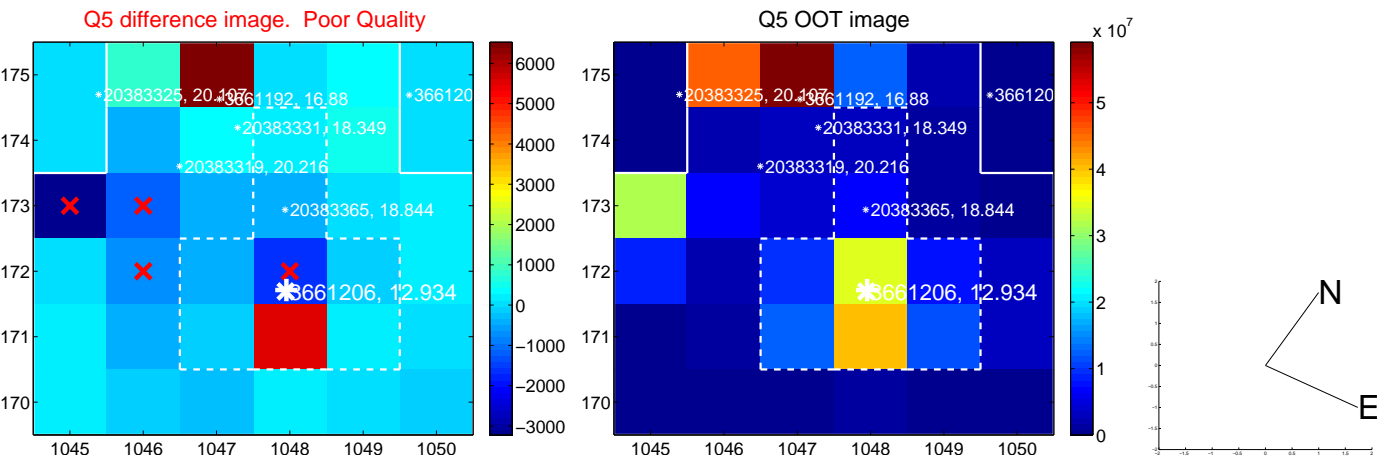


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

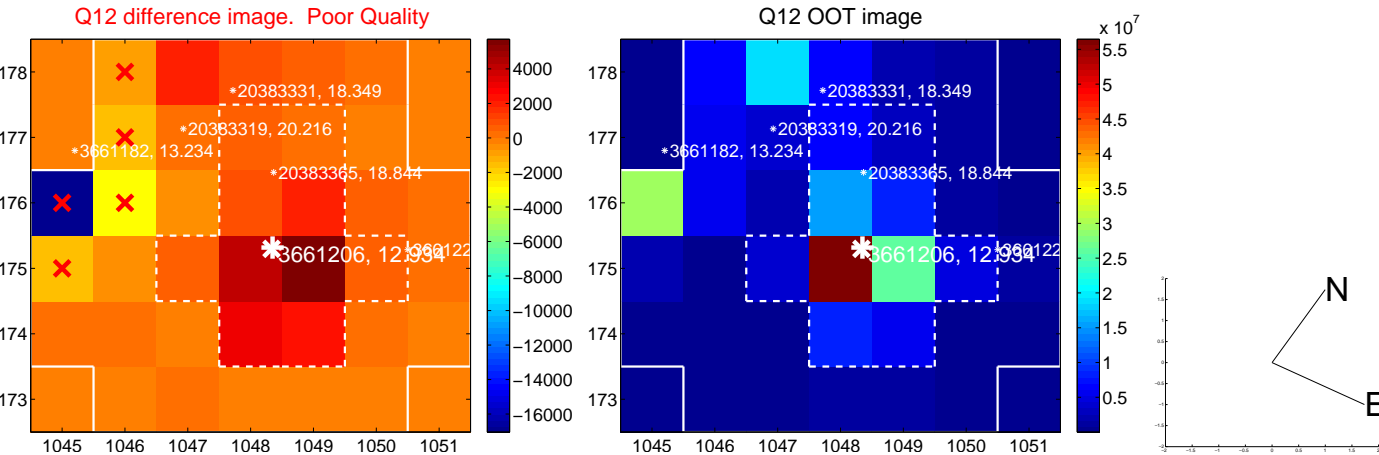
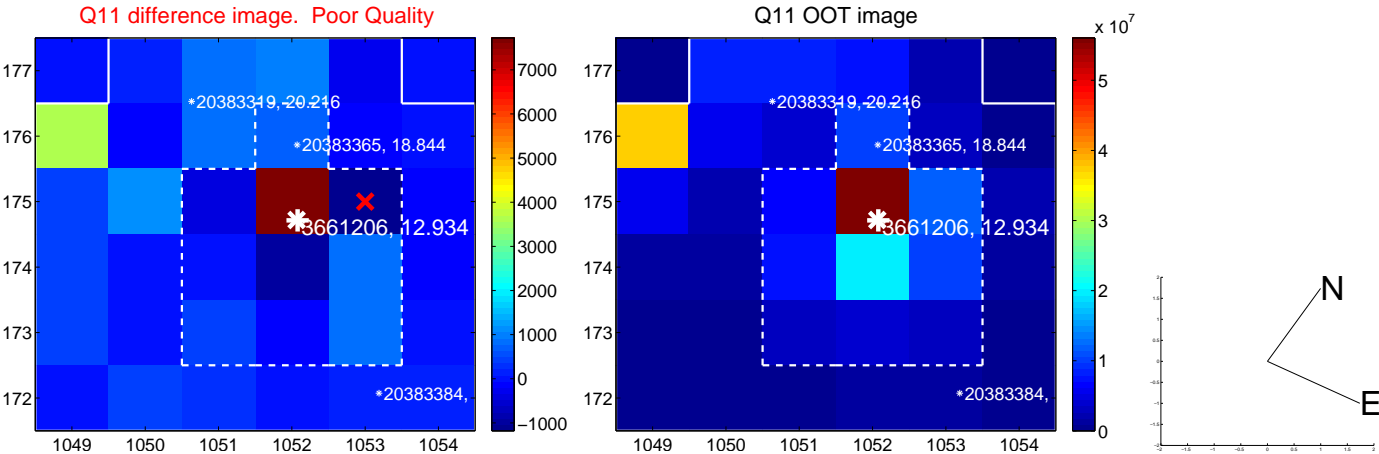
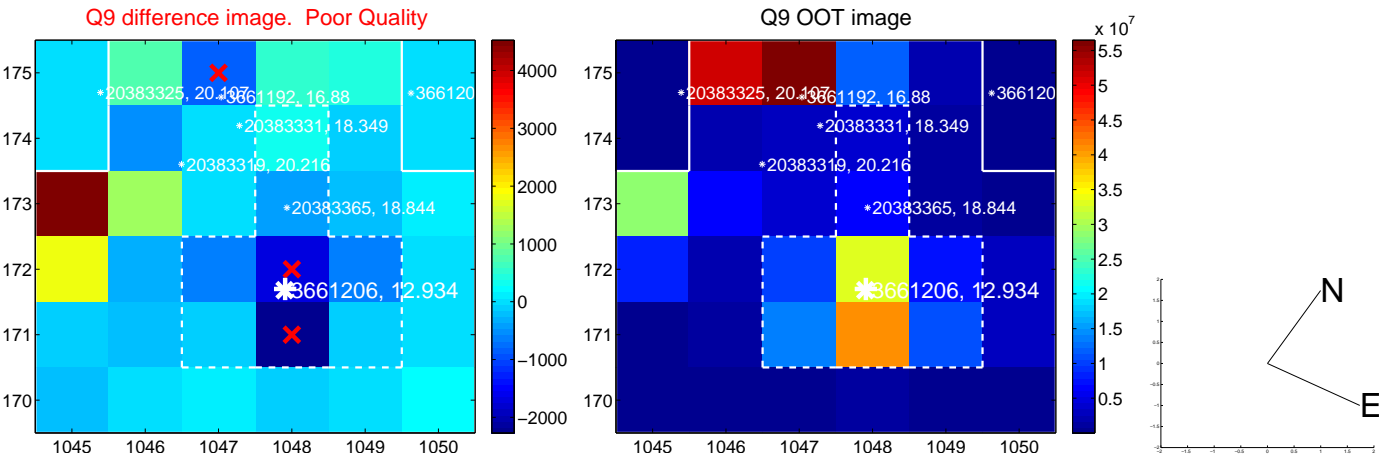
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



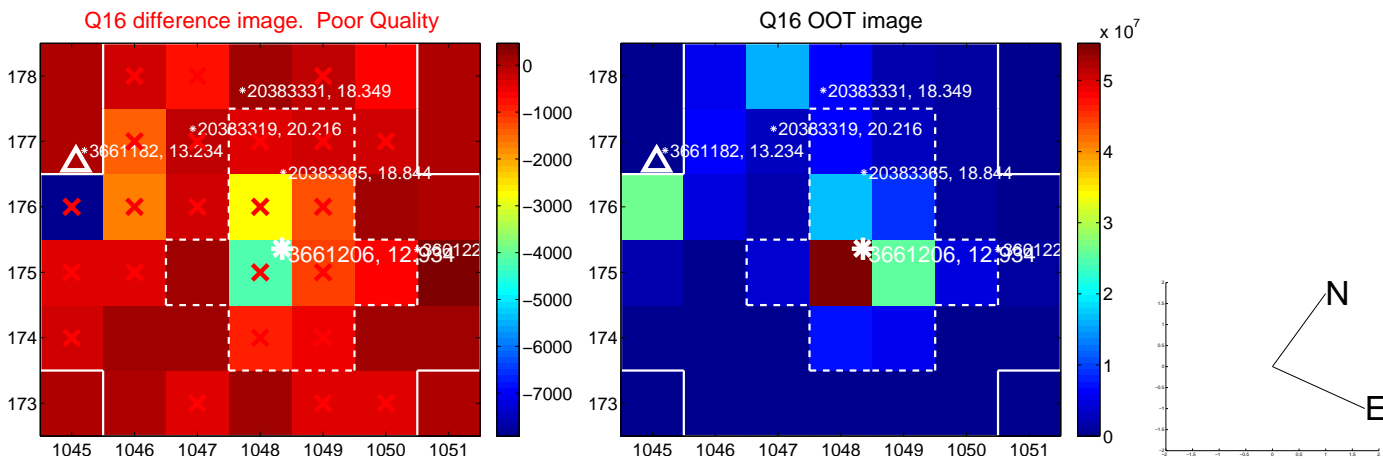
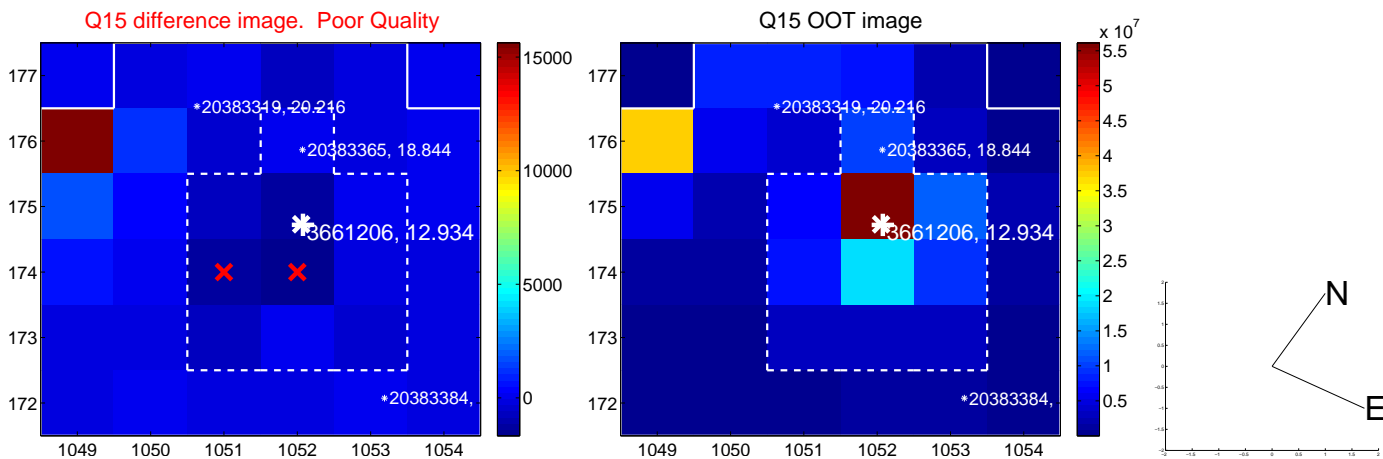
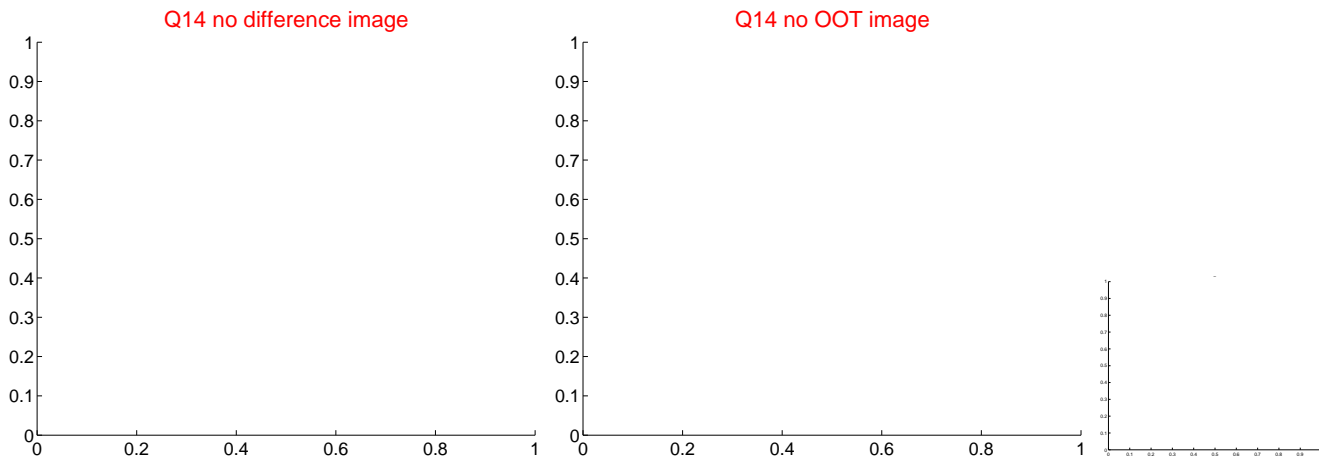
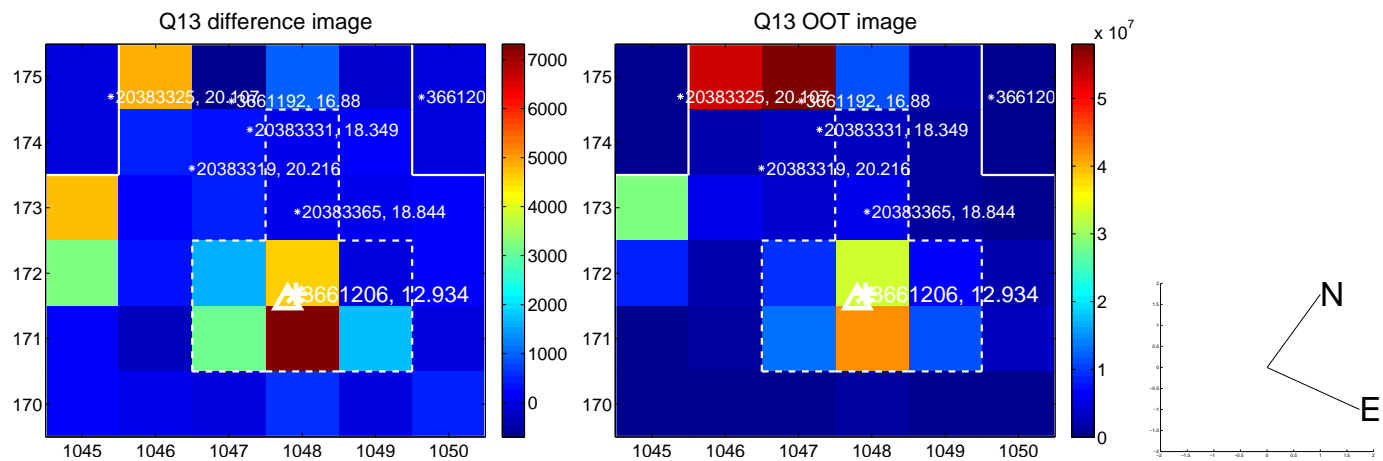
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



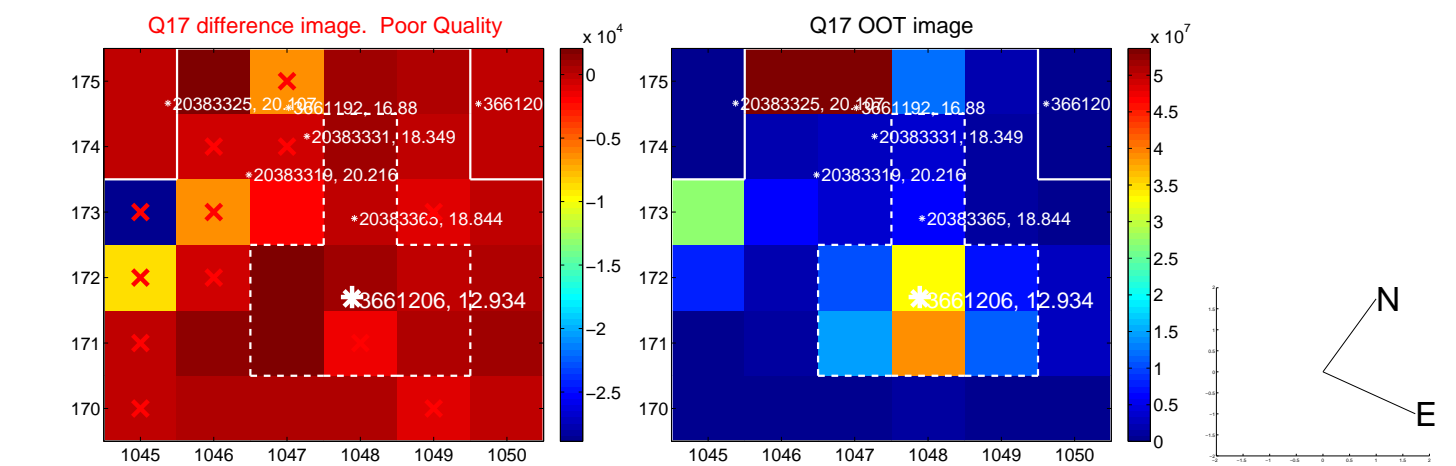
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



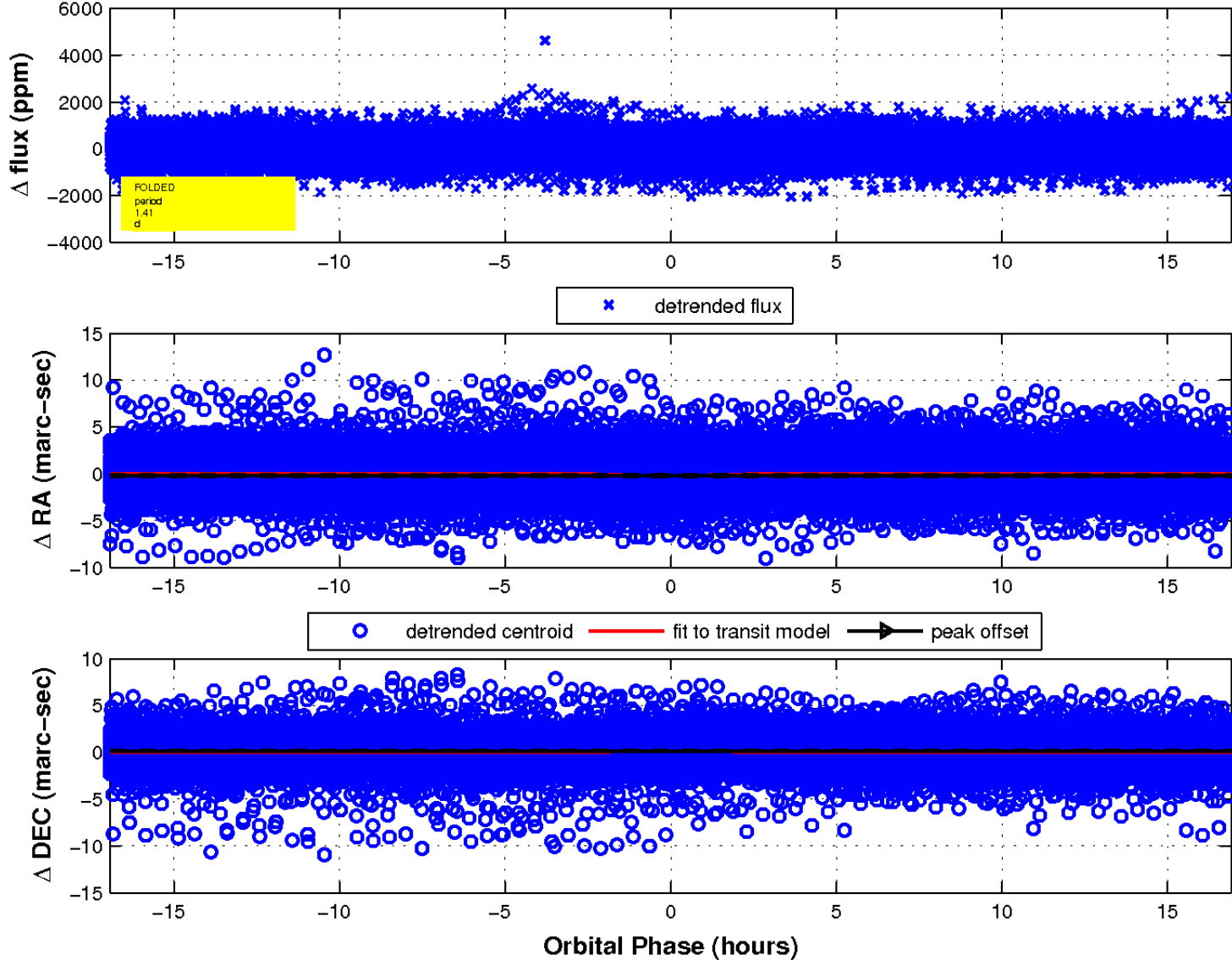
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

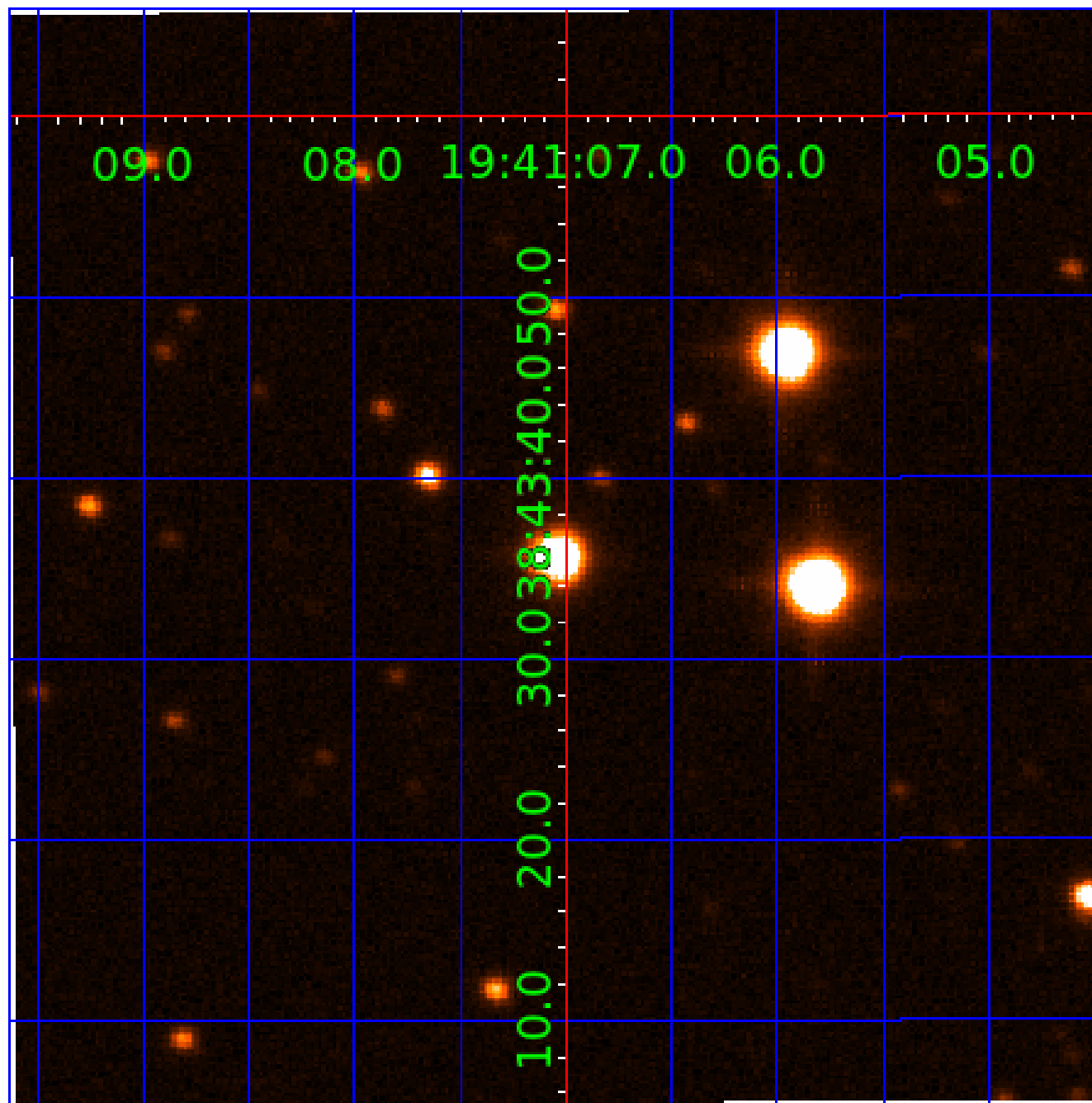


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 003661206

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
003661206-01	OBS	No	3.586322	134.766720	89.1	13.766	9.0	9.8	1.65	7236	1.79	2418.06
003661206-02	OBS	No	431.429911	148.112115	1188.2	17.528	11.5	10.8	1.65	7236	6.68	4.07
003661206-03	OBS	No	1.410820	131.915654	114.5	6.184	11.3	12.4	1.65	7236	2.92	8388.87
003661206-04	OBS	No	1.410858	132.604741	124.2	6.538	13.5	16.5	1.65	7236	2.89	8388.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003661206-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003661206-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
003661206-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003661206-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

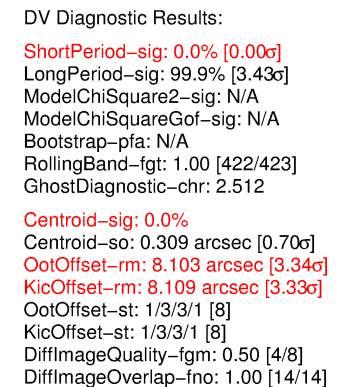
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

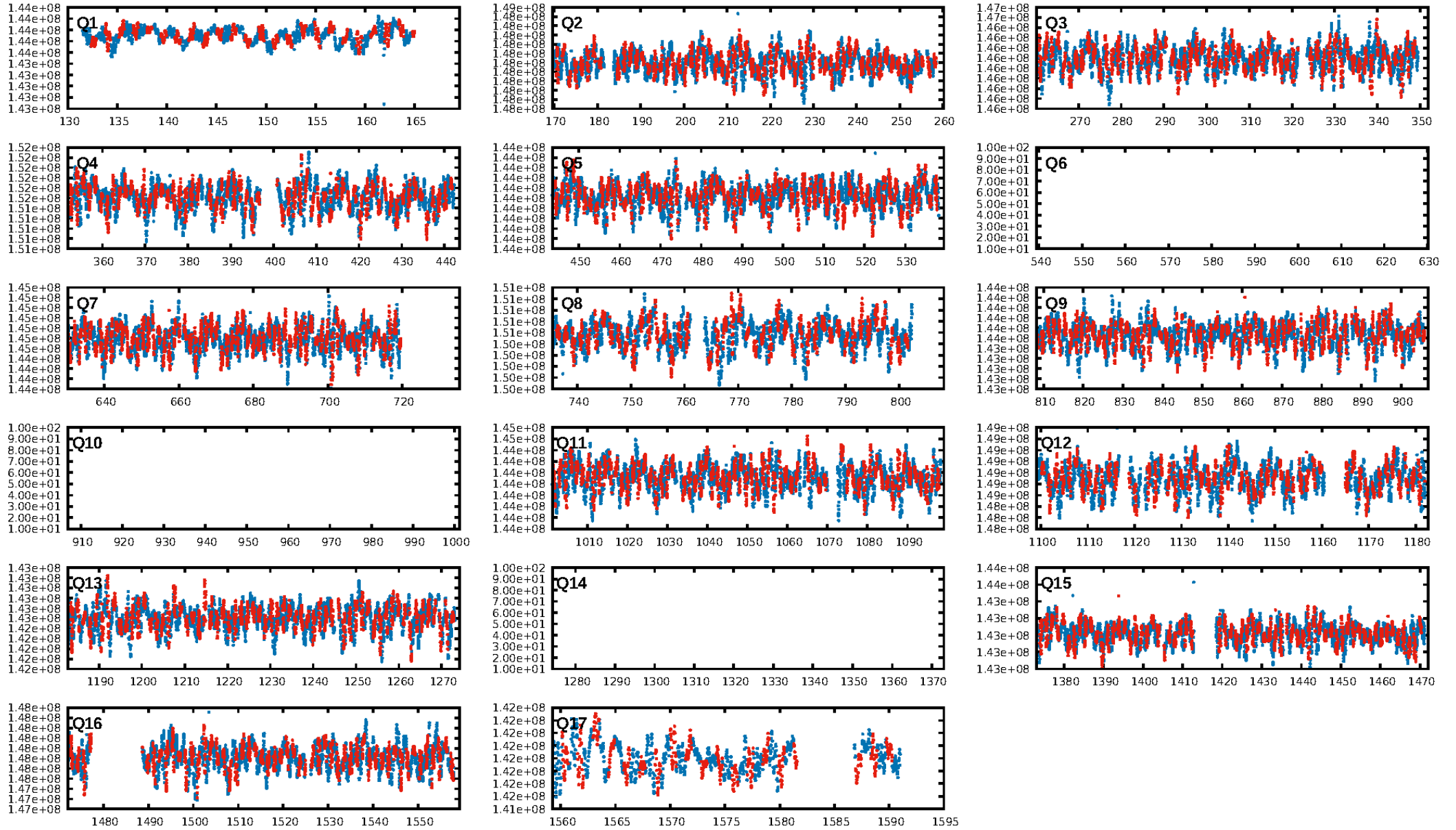
Ephemeris Match Information For 003661206-04

No Significant Match Found

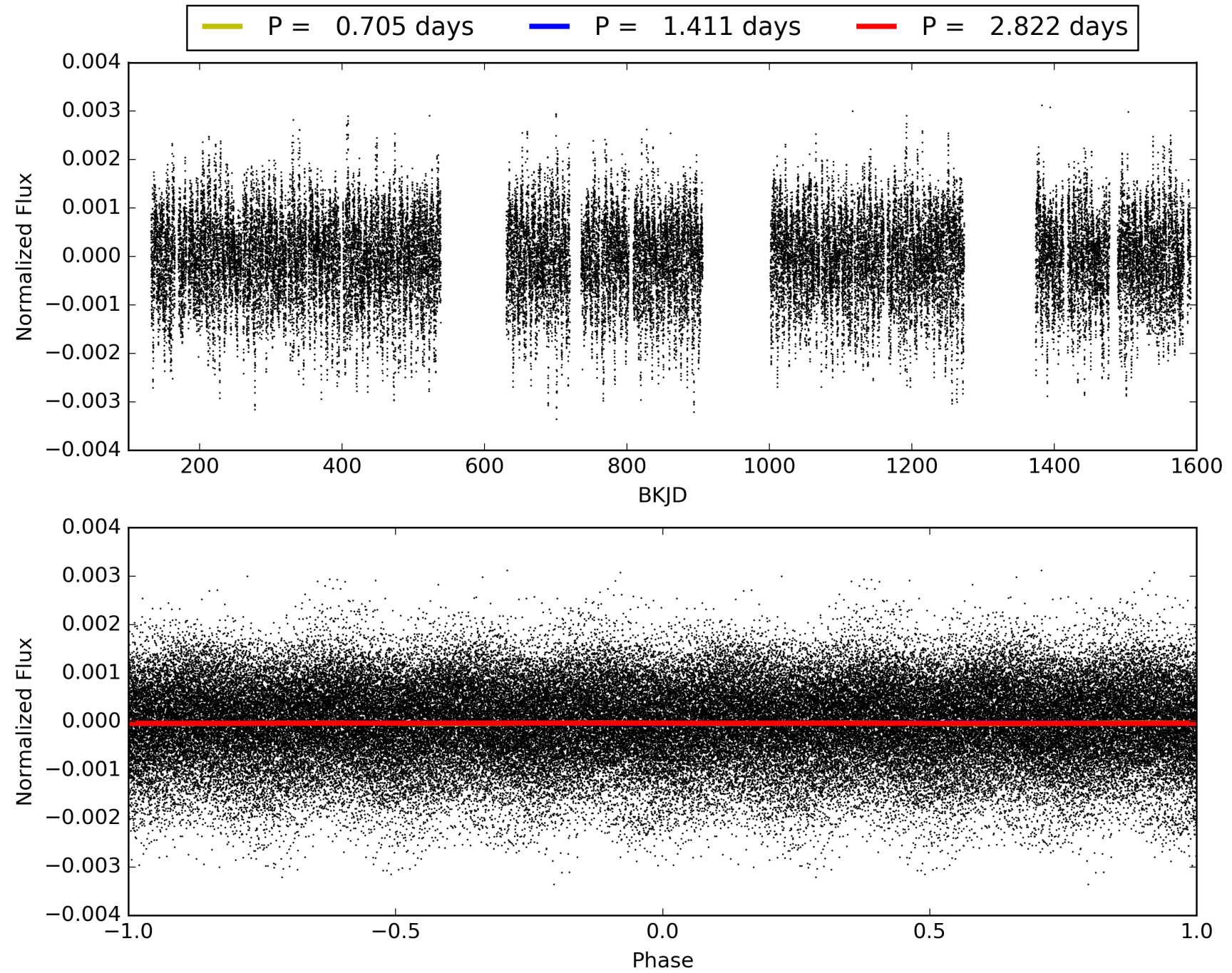
KIC: 3661206 Candidate: 4 of 4 Period: 1.411 d



TCE 003661206-04, PDC Light Curves

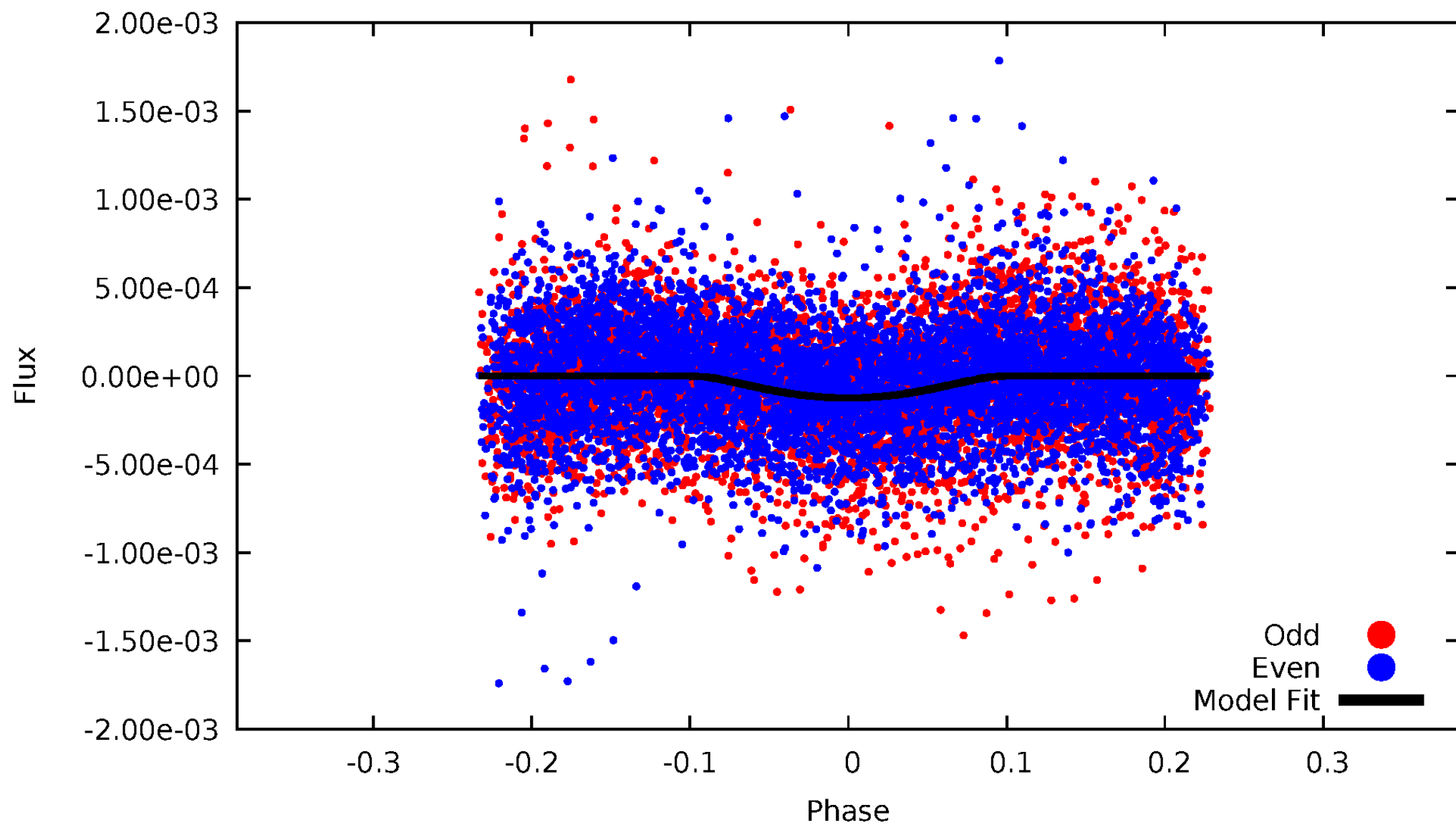


TCE 003661206-04



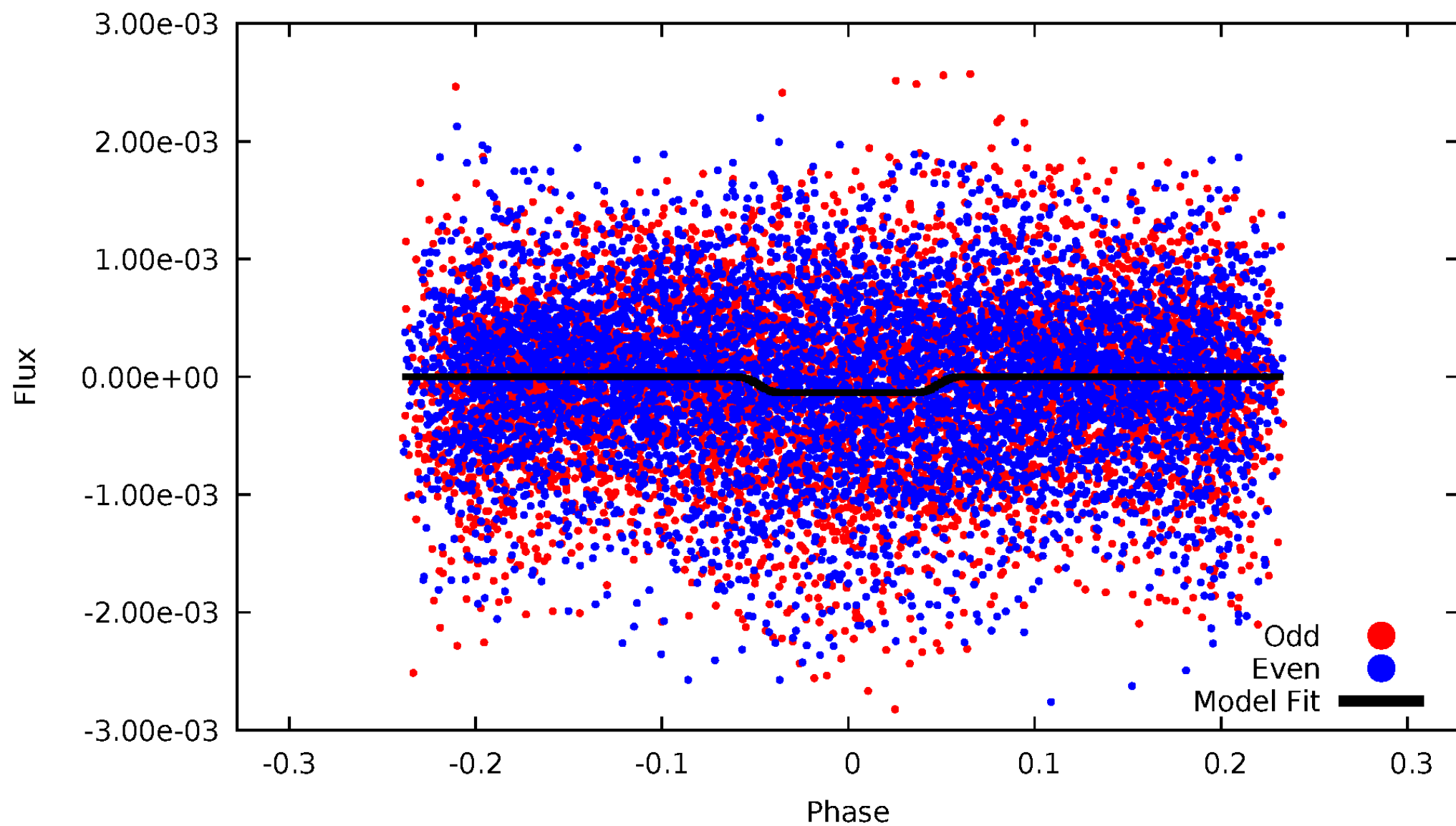
DV Odd/Even

TCE 003661206-04



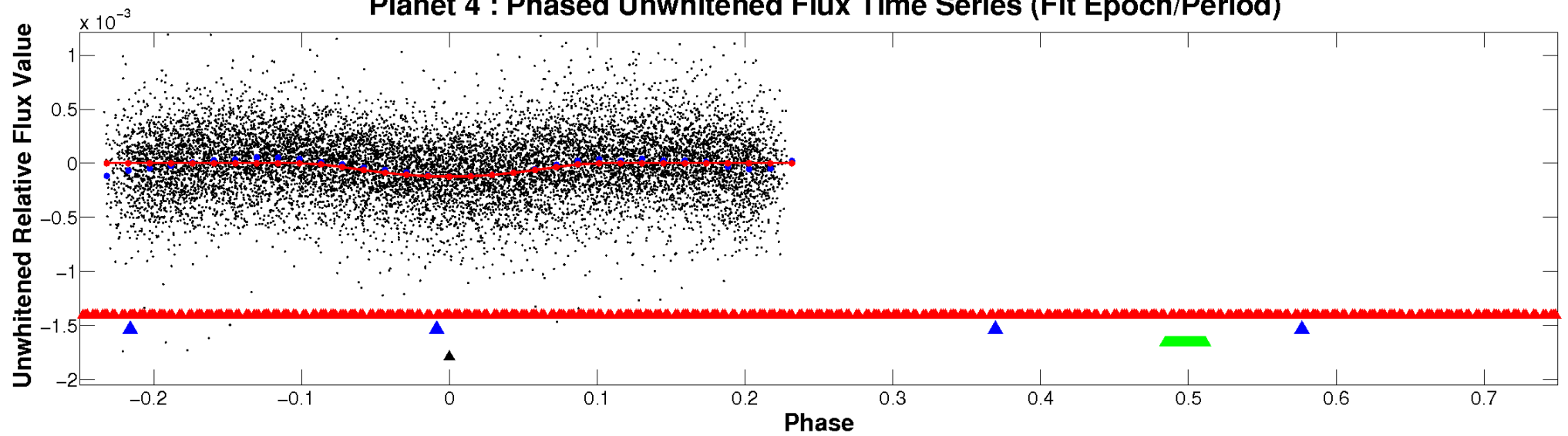
ALT Odd/Even

TCE 003661206-04

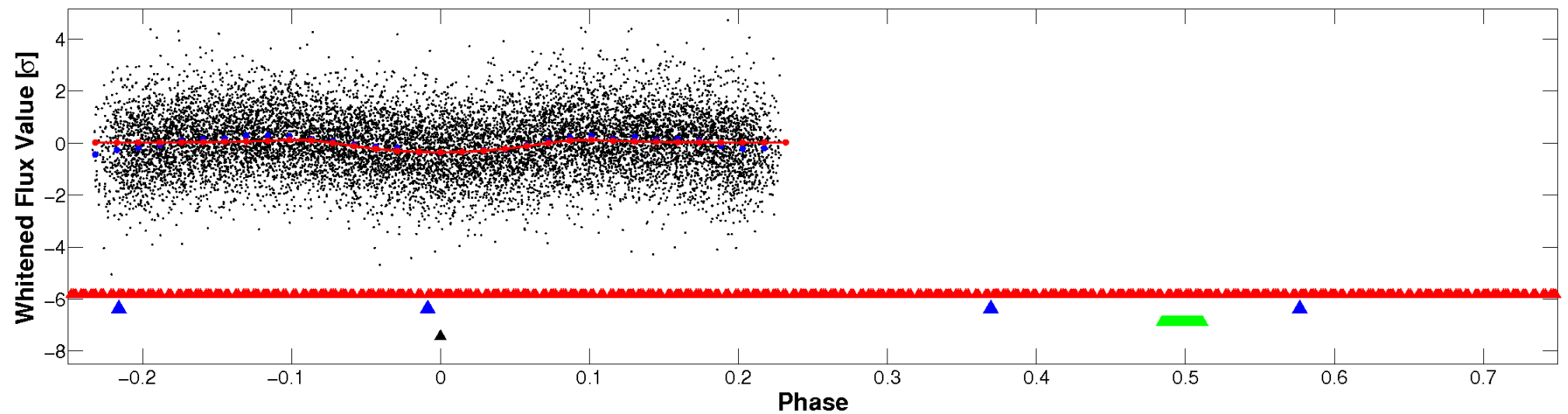


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

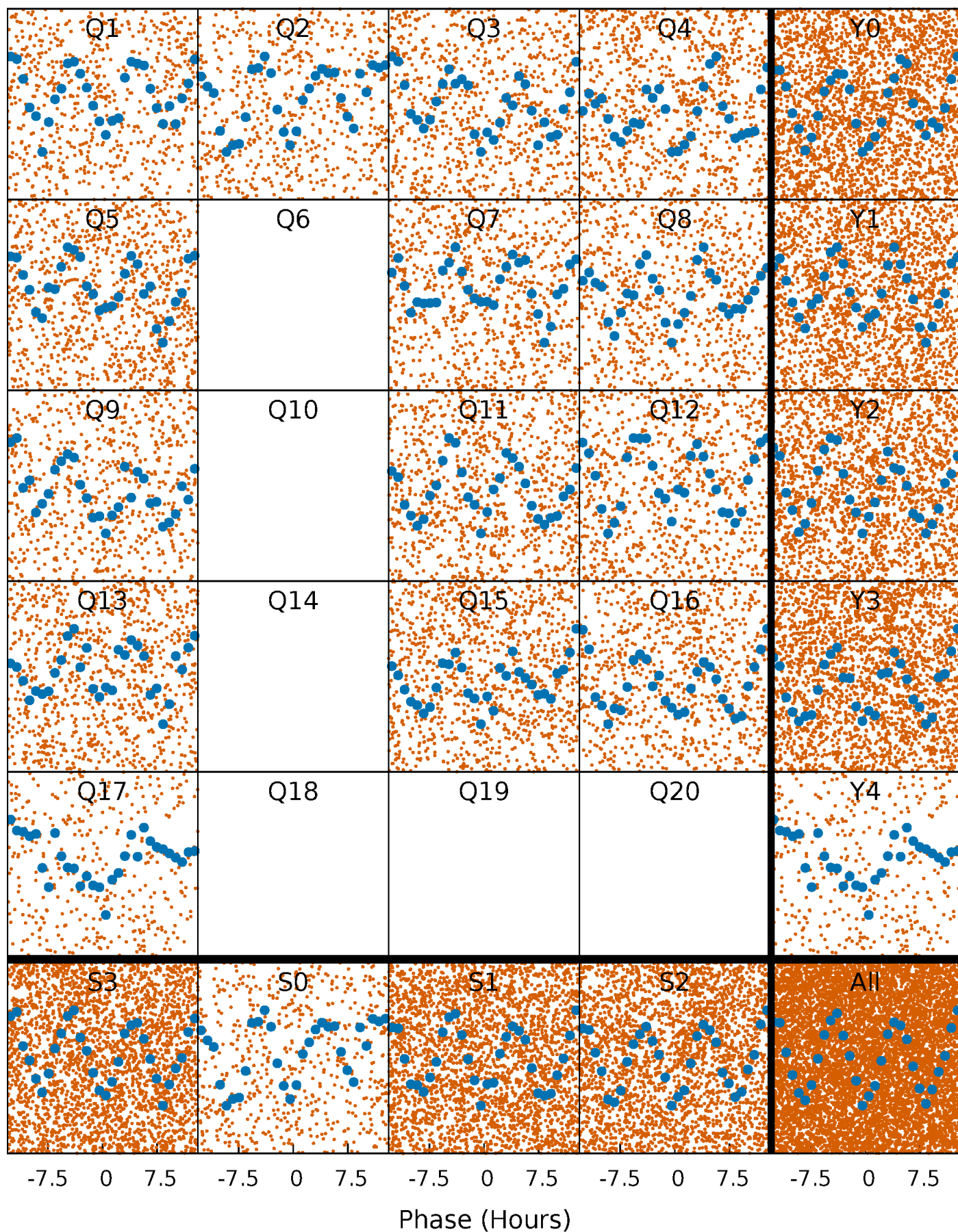


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



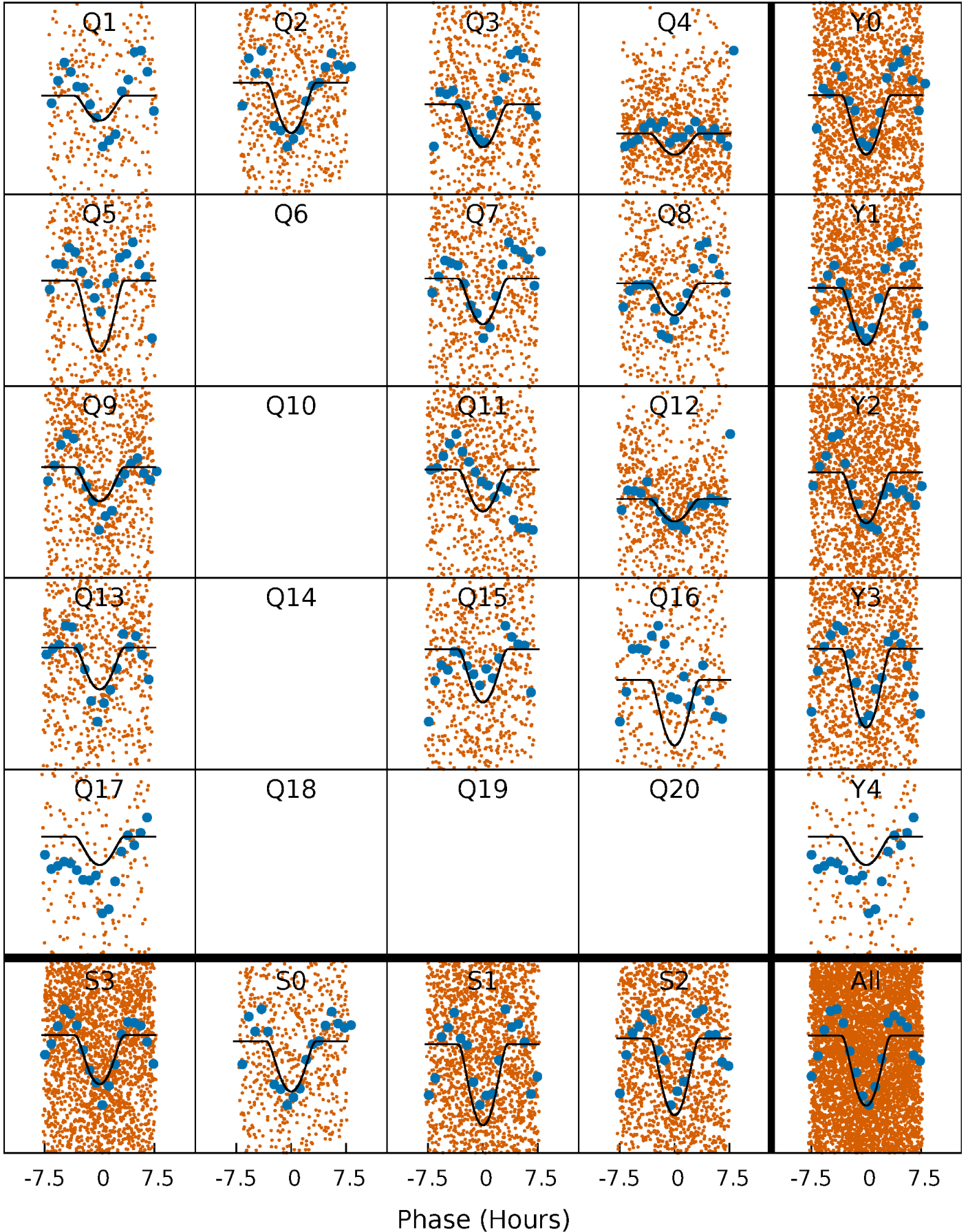
PDC Quarter-Phased Transit Curves

TCE 003661206-04 $P = 1.410858$ Days $T_0 = 132.604741$ (BKJD)



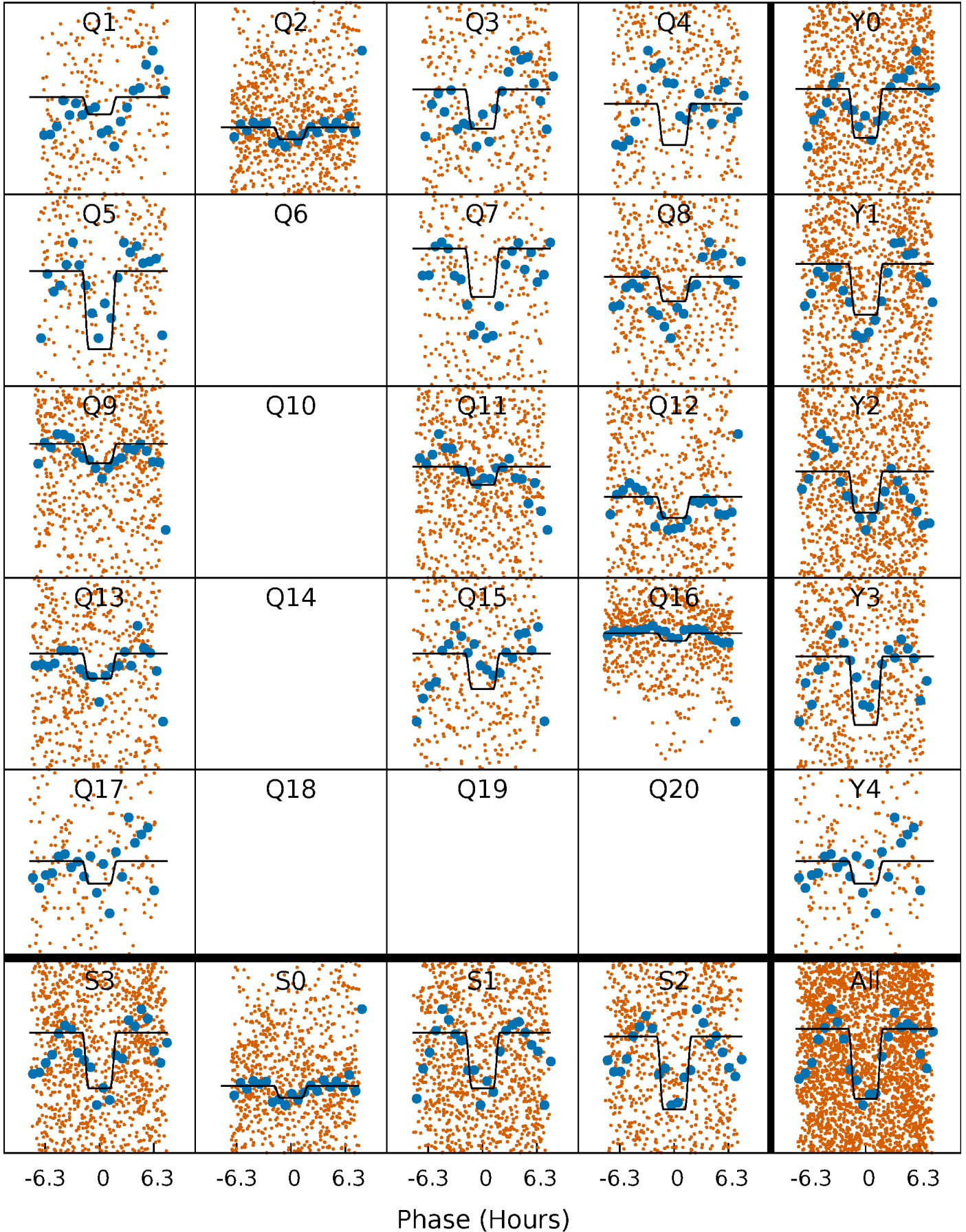
DV Quarter-Phased Transit Curves

TCE 003661206-04 $P = 1.410858$ Days $T_0 = 132.604741$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

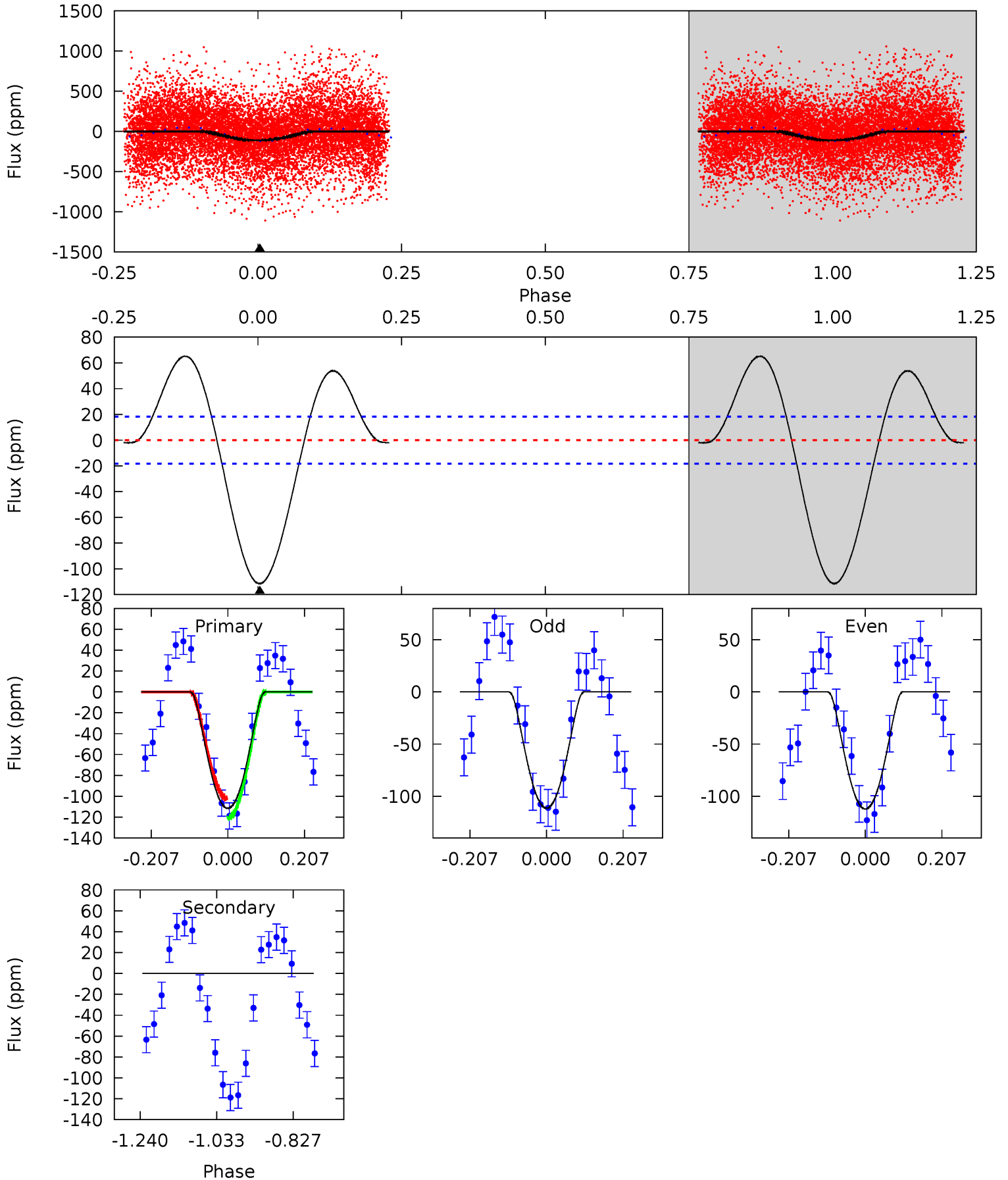
TCE 003661206-04 P= 1.410873 Days $T_0=132.597441$ (BKJD)



DV Model-Shift Uniqueness Test

003661206-04, P = 1.410858 Days, E = 131.193883 Days

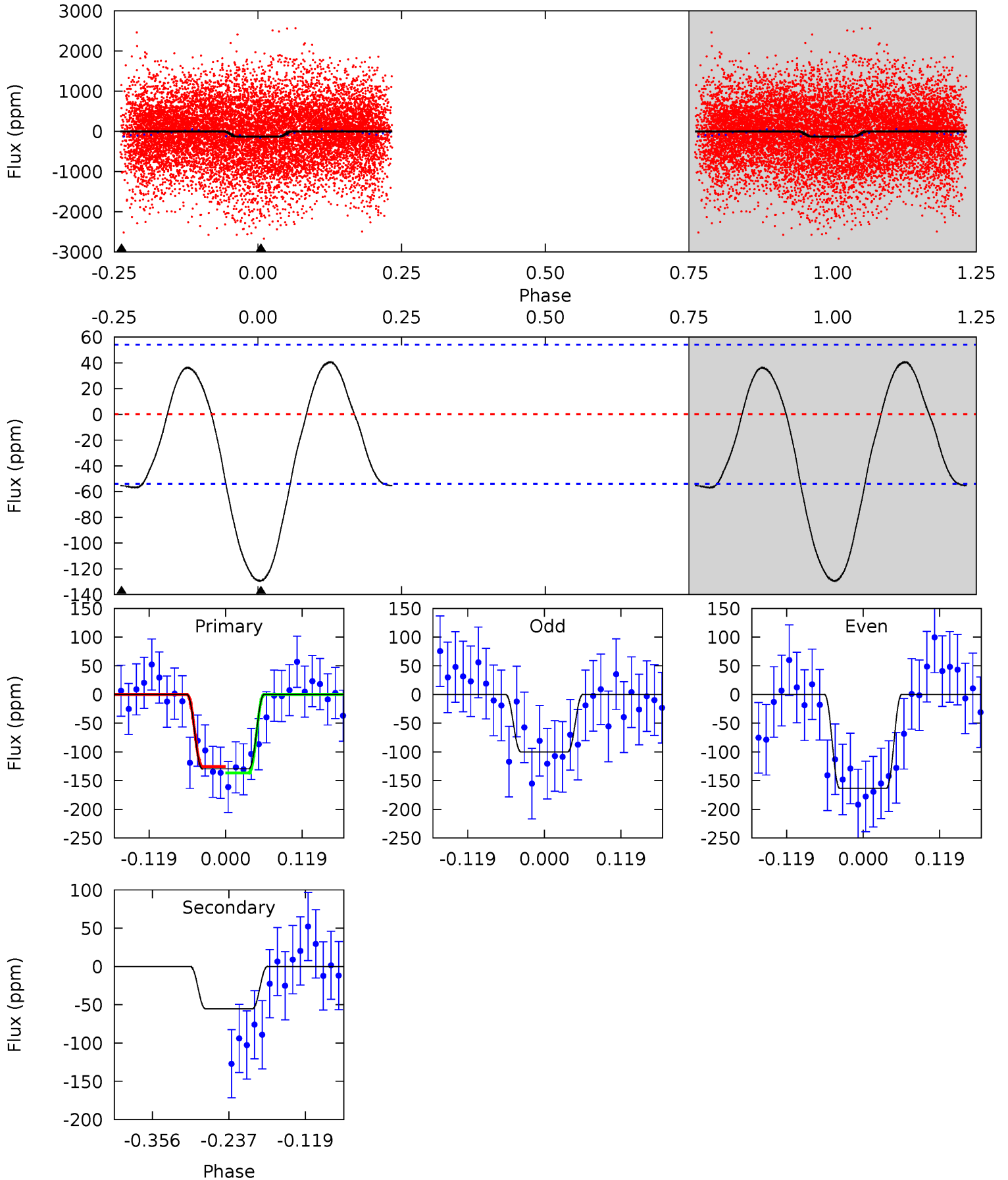
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	0	0	0	4.41	1.26	0.73	26.9	26.9	0	0	0.10	1.00	0.37	2.39



Alt Model-Shift Uniqueness Test

003661206-04, P = 1.410873 Days, E = 131.186568 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	4.64	0	0	4.53	1.56	2.74	10.8	10.8	4.64	4.64	2.66	1.09	0.24	0.43



Stellar Parameters For KIC 003661206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7236^{+230}_{-316}	$4.180^{+0.105}_{-0.195}$	$-0.040^{+0.200}_{-0.350}$	$1.645^{+0.540}_{-0.291}$	$1.494^{+0.221}_{-0.221}$	$0.473^{+0.278}_{-0.234}$
	+3%/-4%	+3%/-5%	+500%/-875%	+33%/-18%	+15%/-15%	+59%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003661206-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 4	$3.10^{+1.28}_{-1.32}$	3436^{+270}_{-212}	-3354^{+603}_{-342}	$0.001^{+0.218}_{-0.247}$
Alt.	-55 ± 12	$2.27^{+1.37}_{-1.19}$	3437^{+270}_{-231}	5479^{+2774}_{-1114}	$4.627^{+15.882}_{-2.855}$

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

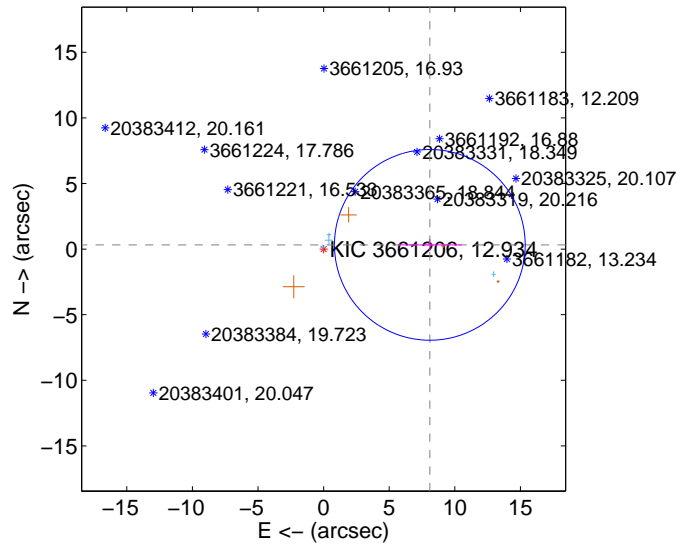
Supplemental centroid analysis for 003661206-04. Kepler magnitude: 12.93. Transit SNR 16.53

There are 4 quarters with good PRF difference image offsets

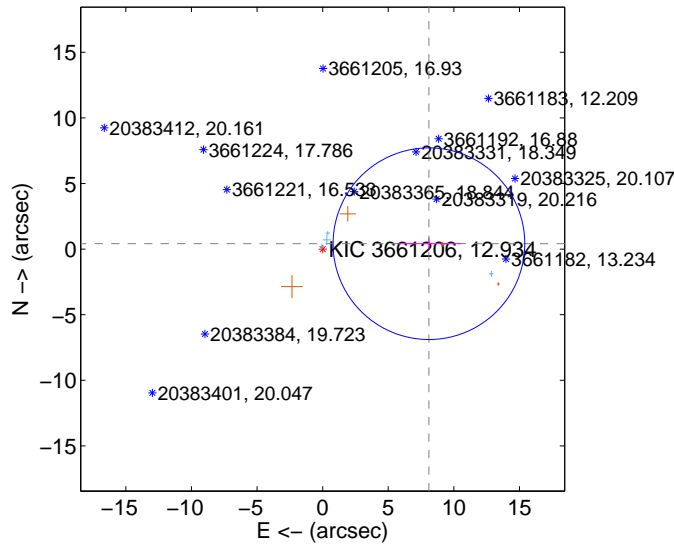
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.103 \pm 2.423	3.34	-8.096 \pm 2.425	0.322 \pm 0.439
PRF-fit source offset from KIC position	8.109 \pm 2.434	3.33	-8.099 \pm 2.437	0.411 \pm 0.453
photometric centroid source offset	0.31 \pm 0.44	0.70	-0.09 \pm 0.54	0.29 \pm 0.43

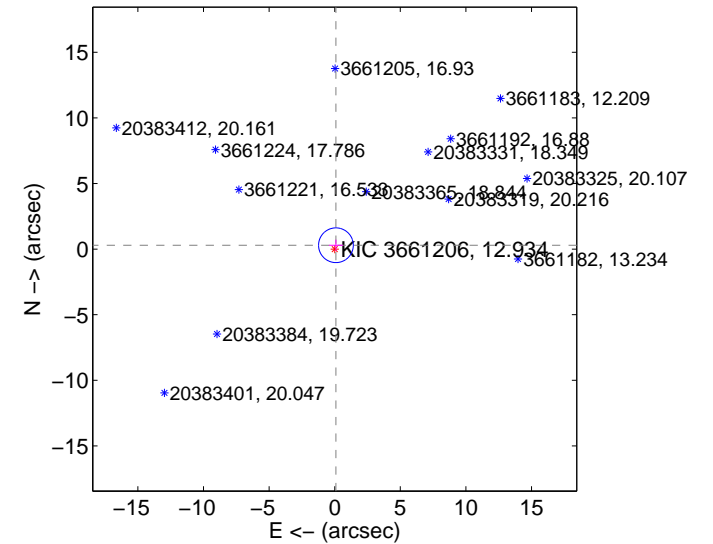
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

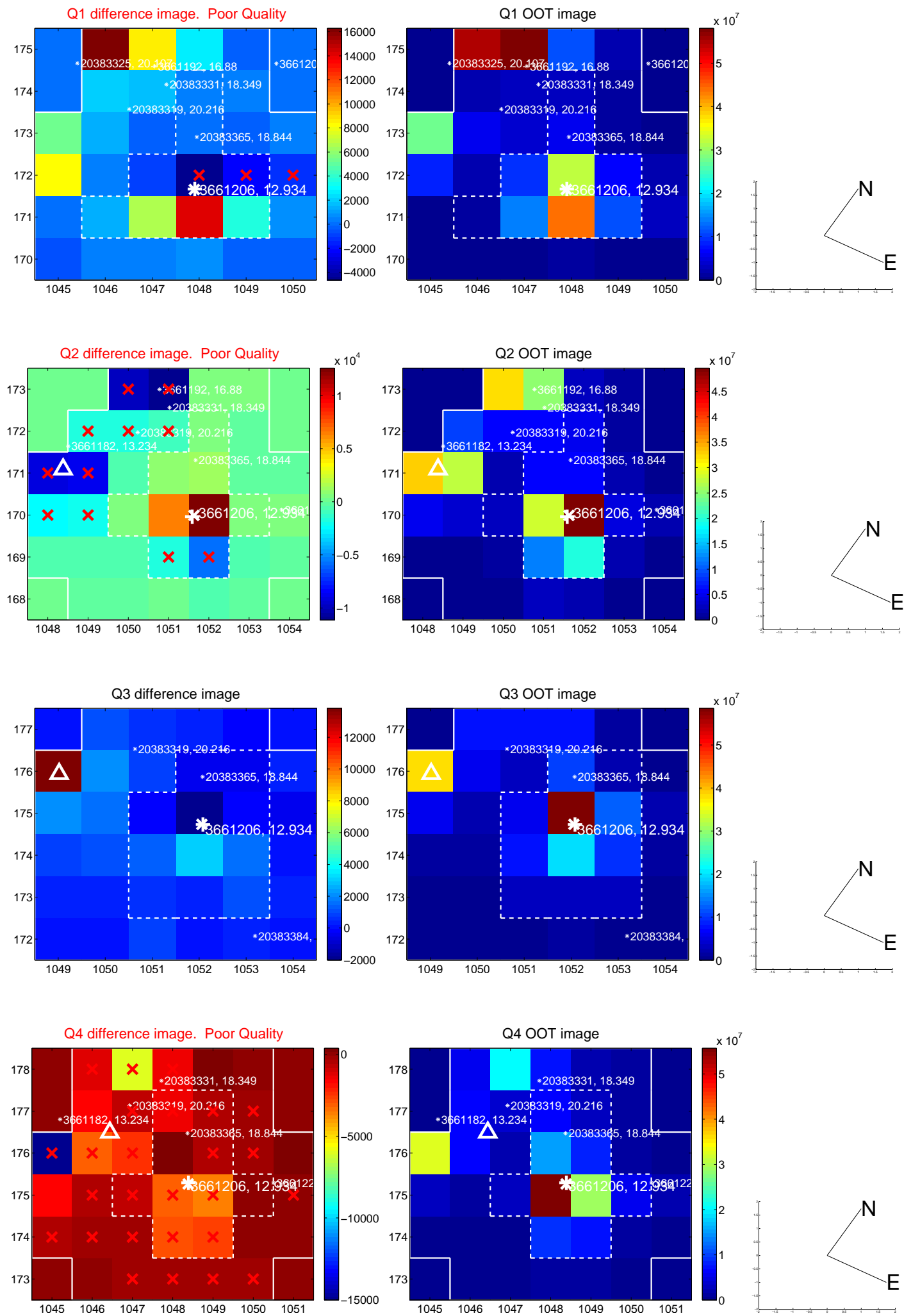


offset from photometric centroids

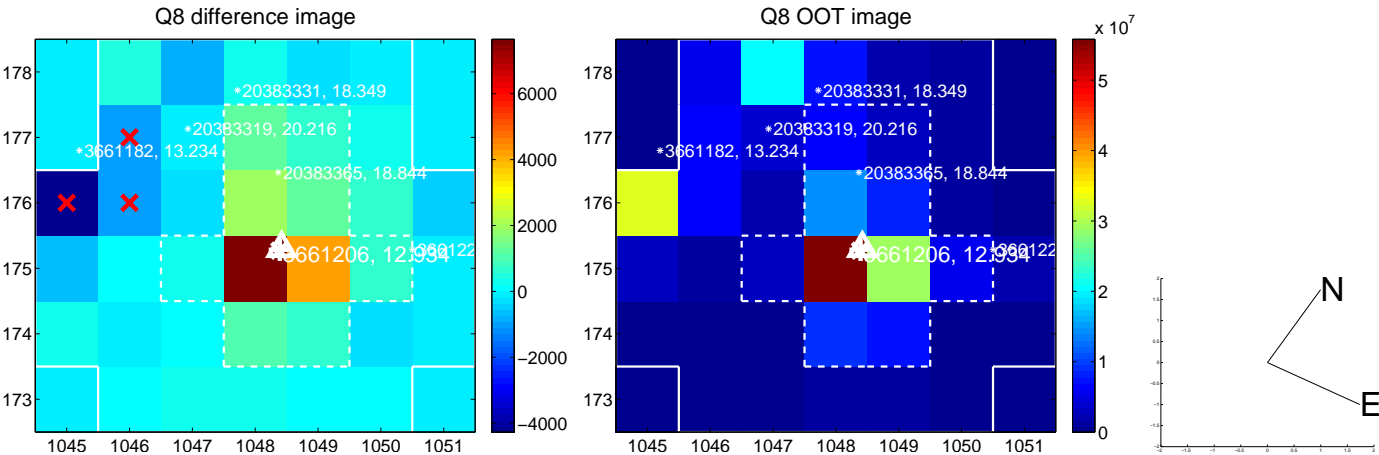
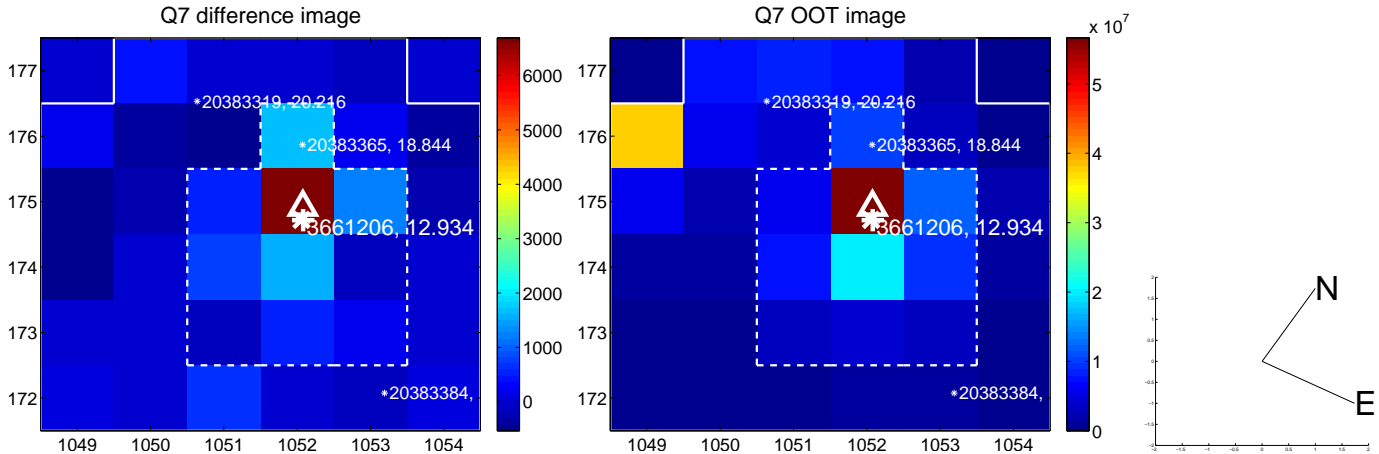
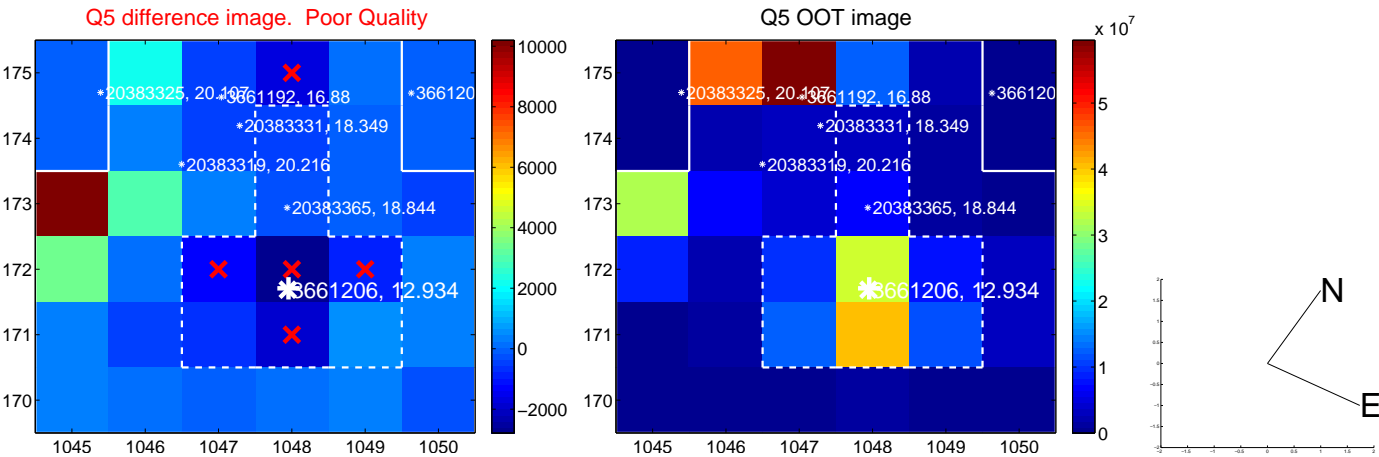


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

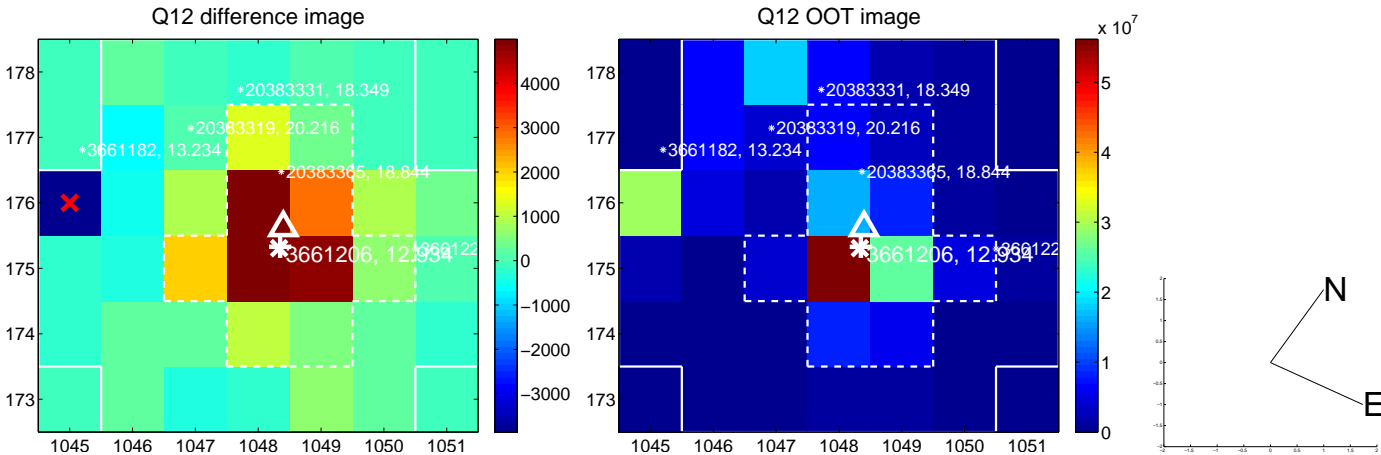
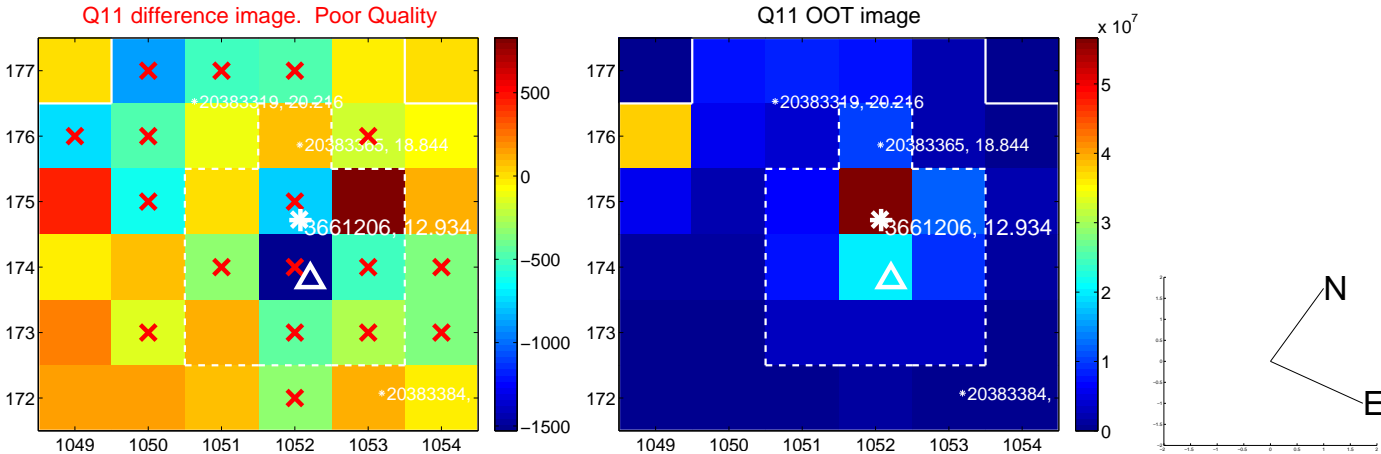
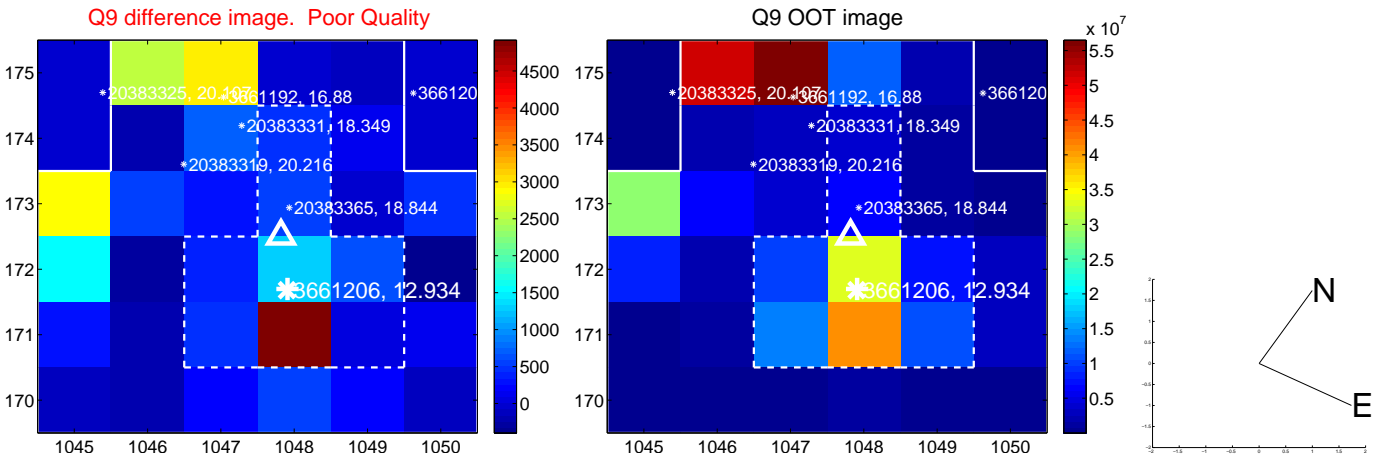
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



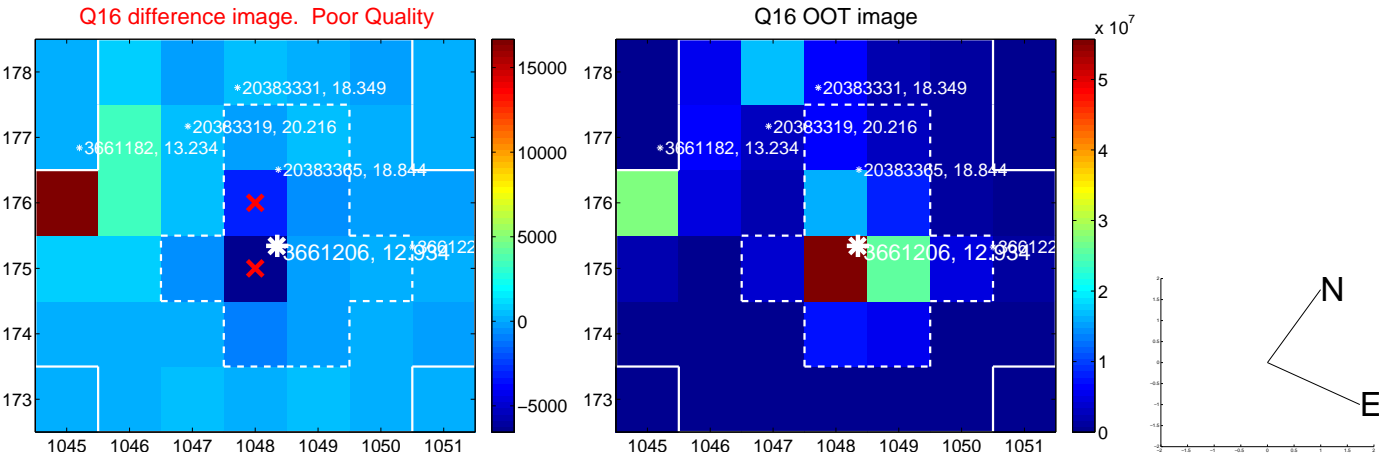
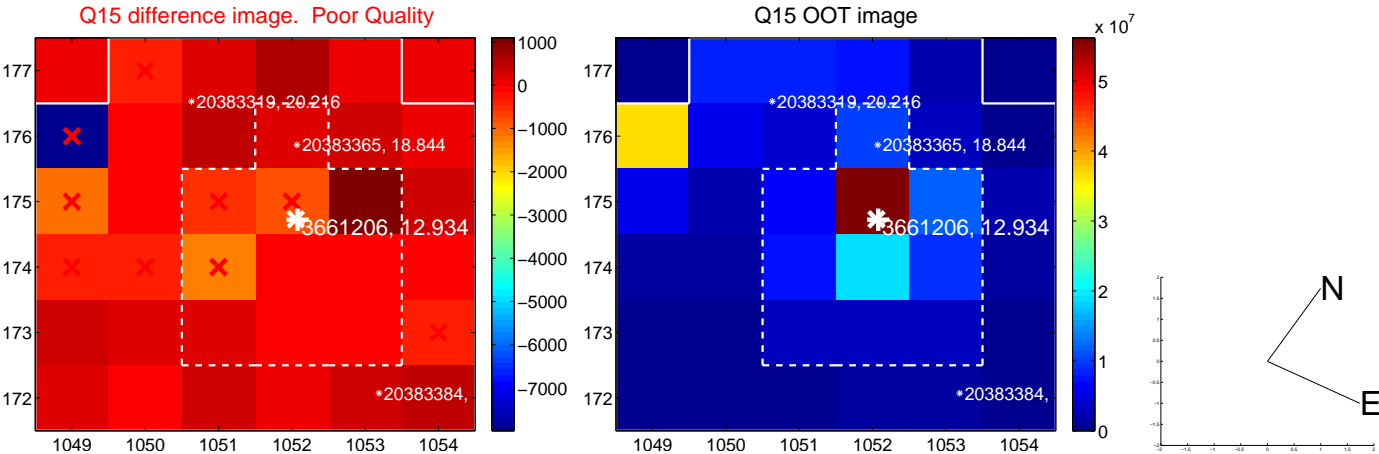
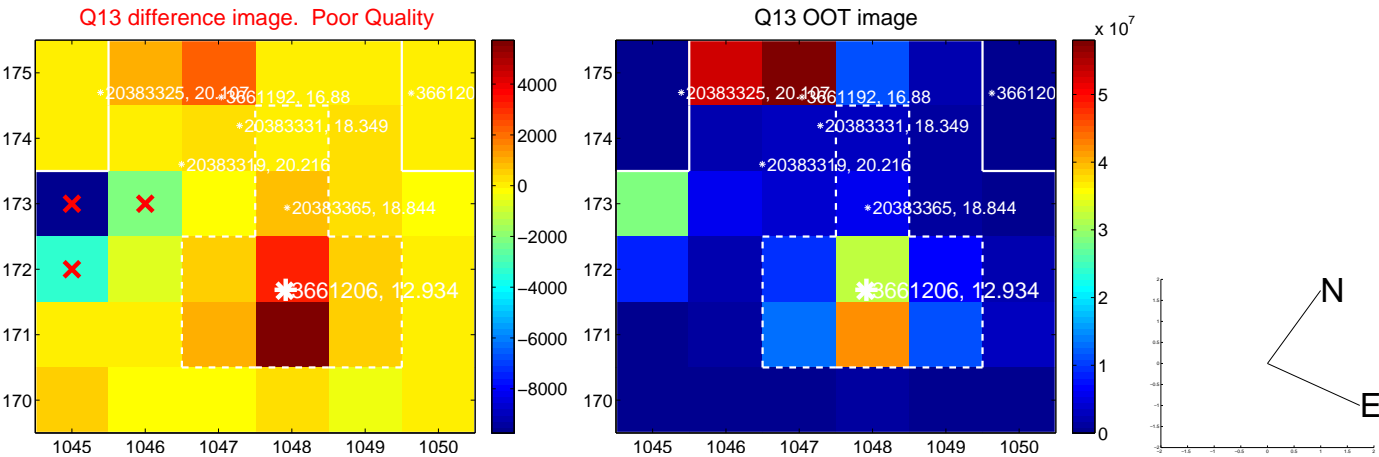
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



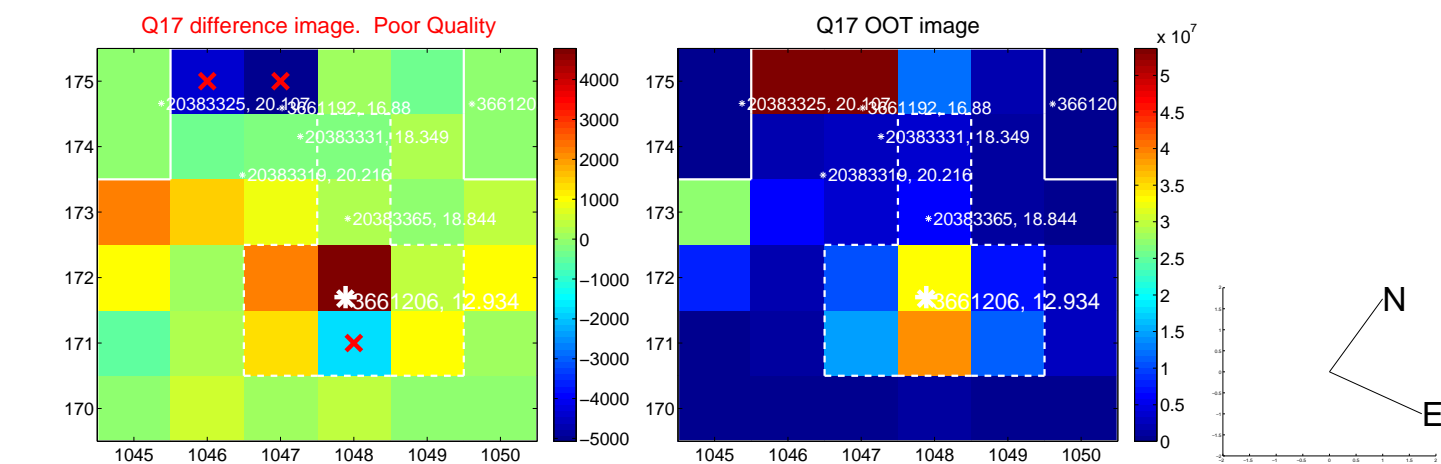
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



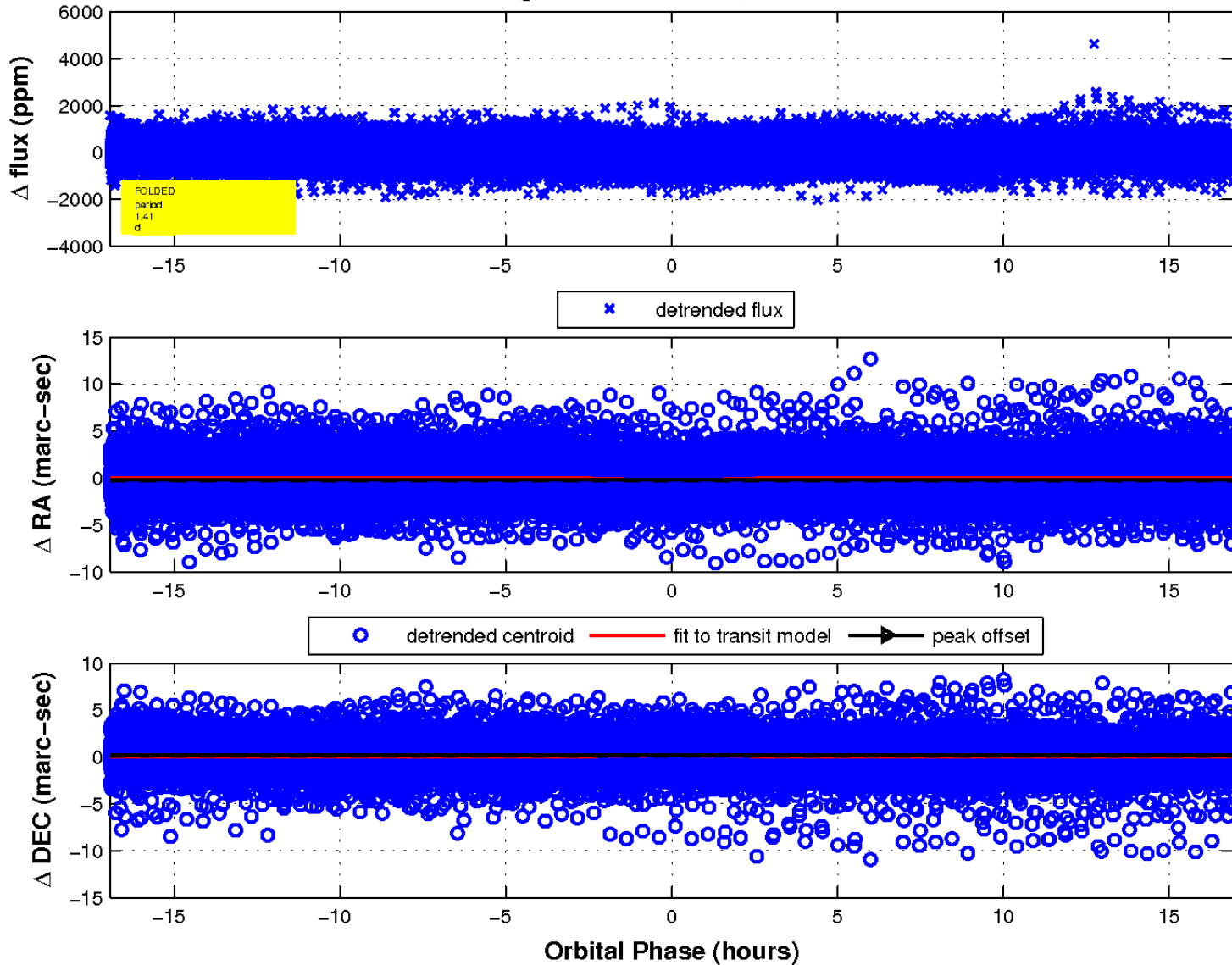
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

